

EXHIBIT 34-B
FILED UNDER SEAL
(Pt. 2 of Declaration of
Ignatius Grande)

EXHIBIT 16

Message

From: [REDACTED]
Sent: 6/17/2014 1:34:53 PM
To: [REDACTED]

• [REDACTED], 2014-06-17 06:34:53

hi! have u connected w/ Sean?

• [REDACTED], 2014-06-17 06:42:53

hey can u do a 930A tomm or are u w/ misty until 10

• [REDACTED], 2014-06-17 07:07:49

can we punt vikas

• [REDACTED], 2014-06-17 07:20:26

When is Kristin?

• [REDACTED], 2014-06-17 07:21:16

1130A

• [REDACTED], 2014-06-17 07:21:22

had to move she had a client call at 1030

• [REDACTED], 2014-06-17 07:47:12

ok

• [REDACTED], 2014-06-17 07:47:23

ok proj A sync will be at 1

• [REDACTED], 2014-06-17 07:47:25

gonna move vikas

• [REDACTED], 2014-06-17 07:47:27

its just a catchup

• [REDACTED], 2014-06-17 09:00:47

hi can we punt jared l this week

• [REDACTED], 2014-06-17 09:10:43

Ok

• [REDACTED], 2014-06-17 09:12:27

or do u wanna sync w/ him?

• [REDACTED], 2014-06-17 09:12:38

just not a lot of time so unless hes a priority maybe we should punto :)

• [REDACTED], 2014-06-17 09:35:57

also big reorg announcement w/ pm happening at 1 today

• [REDACTED], 2014-06-17 09:42:52

With who?

• [REDACTED], 2014-06-17 09:43:14

DFP + AdX are going to be 1 product now, no external messaging. Scott and brian will rollup for bellack

- [REDACTED], 2014-06-17 09:43:16

Can we, start, out, meeting, 15 mons later

- [REDACTED], 2014-06-17 09:43:25

let me ask rany / julia

- [REDACTED], 2014-06-17 09:46:01

ok were good

- [REDACTED], 2014-06-17 09:57:53

What is, the, announcement? ,

- [REDACTED], 2014-06-17 09:58:30

that theyre combining DFP and AdX

- [REDACTED], 2014-06-17 09:59:18

Who, will, run it?

- [REDACTED], 2014-06-17 09:59:25

Ba?

- [REDACTED], 2014-06-17 10:12:59

hey

- [REDACTED], 2014-06-17 10:13:02

yes bellack

- [REDACTED], 2014-06-17 10:13:10

wait julia and rany cant do after 115

- [REDACTED] 2014-06-17 10:13:12

ill resched

- [REDACTED], 2014-06-17 10:33:30

can you swing by the huddle?

- [REDACTED] 2014-06-17 10:33:35

yes

- [REDACTED] 2014-06-17 11:00:00

hi! want me to pop in

- [REDACTED] 2014-06-17 11:09:17

when ur done w/ james (15 mins) vikas is going to pop in for 15 then golus for 30

- [REDACTED], 2014-06-17 12:03:36

hi can i pop in

- [REDACTED] 2014-06-17 12:13:53

Where is laurent?

- [REDACTED], 2014-06-17 12:14:49

i think still in the bolt mtg

- [REDACTED], 2014-06-17 12:15:24

are u joining cbs

- [REDACTED], 2014-06-17 12:16:06

Running late

- [REDACTED], 2014-06-17 12:16:09

ok

- [REDACTED], 2014-06-17 12:16:13

Does don need me?

- [REDACTED], 2014-06-17 12:16:22

asking

- [REDACTED] 2014-06-17 12:16:27

if not - want me to bump up regan

- [REDACTED], 2014-06-17 12:16:35

good

- [REDACTED], 2014-06-17 12:16:39

dont need to join

- [REDACTED], 2014-06-17 12:17:29

do u need LC?

- [REDACTED], 2014-06-17 13:57:44

ah sorry!

- [REDACTED], 2014-06-17 13:57:47

i didnt realize brian was out

- [REDACTED] 2014-06-17 13:57:51

should we punt that agenda

- [REDACTED], 2014-06-17 13:57:52

np just found out

- [REDACTED], 2014-06-17 13:57:56

ok

- [REDACTED] 2014-06-17 13:58:01

should we shorten mtg to 30 mins?

- [REDACTED] 2014-06-17 13:58:06

are u ready for bonita

- [REDACTED], 2014-06-17 13:58:22

abby was just asking

- [REDACTED], 2014-06-17 14:25:45

hey can i add time for u and laurent tomm AM?

- [REDACTED] 2014-06-17 14:28:13

Y

EXHIBIT 17

Message

From: Aparna Pappu [apappu@google.com]
Sent: 4/4/2016 3:42:33 PM
To: [REDACTED]

- **Aparna Pappu**, 2016-04-04 08:42:33
i removed [REDACTED] as dotted line to me btw
- **Aparna Pappu**, 2016-04-04 08:42:36
so we avoid a circular loop
- [REDACTED], 2016-04-04 08:43:16
cool
- **Aparna Pappu**, 2016-04-04 11:22:31
in summary appnexus == hot air?
- [REDACTED] 2016-04-04 11:22:39
and is that surprising?
- [REDACTED] 2016-04-04 11:22:42
not to me 😊
- **Aparna Pappu**, 2016-04-04 11:22:43
no
- [REDACTED] 2016-04-04 11:22:50
as much as i like these things
- **Aparna Pappu**, 2016-04-04 11:22:50
but why do we need a deck
- [REDACTED] 2016-04-04 11:22:55
this week is just not a good time for it
- [REDACTED] 2016-04-04 11:23:03
well I assume she was asked to do this research
- **Aparna Pappu**, 2016-04-04 11:23:07
yeah
- [REDACTED] 2016-04-04 11:23:49
promo + perf is killing me...
- **Aparna Pappu**, 2016-04-04 11:24:03
a little death is good now and then 😊
- [REDACTED] 2016-04-04 11:24:10
you got it wrong
- **Aparna Pappu**, 2016-04-04 11:24:12
rebirth
- [REDACTED], 2016-04-04 11:24:18

it's what doesn't kill you makes you stronger

- [REDACTED], 2016-04-04 11:24:20

what kills you... well that's it

- **Aparna Pappu**, 2016-04-04 11:24:35

remember i come from a land of no such thing as death

- **Aparna Pappu**, 2016-04-04 11:24:37

just rebirth

- [REDACTED] 2016-04-04 11:24:47

well jews believe in that too

- [REDACTED], 2016-04-04 11:24:48

i think

- [REDACTED] 2016-04-04 11:24:50

but what do i know

- **Aparna Pappu**, 2016-04-04 11:25:04

if youre lucky higher life form if not sucks and if you're really awesome vaporware

- [REDACTED] 2016-04-04 11:25:28

it's these times of the year where everything is happening at the same time

- [REDACTED] 2016-04-04 11:25:35

that make me want to move to Thailand and live off the land

- **Aparna Pappu**, 2016-04-04 11:25:46

hahaha

- [REDACTED] 2016-04-04 11:26:06

i don't think there's enough coffee in the world to keep me focused

- [REDACTED], 2016-04-04 11:26:16

gonna do a full spa day after all this calms down

- **Aparna Pappu**, 2016-04-04 11:26:35

korean?

- [REDACTED], 2016-04-04 11:26:37

like day off, breakfast, rest, massage, rest, lunch, rest, more rest, dinner

- [REDACTED], 2016-04-04 11:26:51

i actually don't know anything about spa's but i hear they're relaxing

- [REDACTED], 2016-04-04 11:26:52

haha

- **Aparna Pappu**, 2016-04-04 11:26:59

korean spa so good

- **Aparna Pappu**, 2016-04-04 11:27:01

literally

- [REDACTED], 2016-04-04 11:27:04

maybe i'll just take a day off and work out and try to do yoga or something

- **Aparna Pappu**, 2016-04-04 11:27:05

they take a scotch brite

- **Aparna Pappu**, 2016-04-04 11:27:11

and scrub a centimeter off you

- [REDACTED], 2016-04-04 11:27:26

hahaha

- **Aparna Pappu**, 2016-04-04 11:27:33

the pain is so worth it

- [REDACTED], 2016-04-04 11:27:38

i thought that's what the russian bathhouses do

- [REDACTED], 2016-04-04 11:56:45

omg have you heard about the adx thing

- [REDACTED], 2016-04-04 11:56:50

the lowering of floors

- [REDACTED], 2016-04-04 11:56:58

i'm sick just thinking about it

- **Aparna Pappu**, 2016-04-04 11:57:54

?

- [REDACTED], 2016-04-04 11:58:03

you really haven't heard of this?

- [REDACTED], 2016-04-04 11:58:05

it's confidential

- [REDACTED], 2016-04-04 11:58:10

so maybe best not to do this over chat

- **Aparna Pappu**, 2016-04-04 11:58:10

no

- **Aparna Pappu**, 2016-04-04 11:58:19

if its confidential

- **Aparna Pappu**, 2016-04-04 11:58:21

it is chat

- **Aparna Pappu**, 2016-04-04 11:58:22

no?

- **Noam Wolf**, 2016-04-04 11:58:30

it is chat?

- **Aparna Pappu**, 2016-04-04 11:58:38

as in this is OTR

- [REDACTED], 2016-04-04 11:58:49

what's OTR? 😊

- **Aparna Pappu**, 2016-04-04 11:58:56

off the record

- [REDACTED], 2016-04-04 11:59:31

oh

EXHIBIT 18

Message

From: [REDACTED]
Sent: 9/23/2019 5:36:26 PM
To: angelini@google.com; gminguzzi@google.com
Subject: AAAAAW5tJgg-MBI-FLAT:2019-09-22T22:36:29.242687

- [REDACTED] 2019-09-23T17:36:26.836Z

Updated room membership.

- Deleted on 2020-05-13T10:51:42.658Z

Updated room membership.

- [REDACTED] 2019-09-23T17:36:29.242Z

can you guys please share the external comms related to the 3% still on 1P?

- Deleted on 2020-05-13T10:51:42.658Z

can you guys please share the external comms related to the 3% still on 1P?

- [REDACTED] 2019-09-23T17:36:30.205Z

I can only see this

- Deleted on 2020-05-13T10:51:42.658Z

I can only see this

- [REDACTED] 2019-09-23T17:36:30.286Z

Q: What percentage of traffic will be kept at second-price auction and for how long? Can I opt-out?

A: We are planning to keep ~3% of your traffic for the first week post launch, then gradually reduce it to zero over the following ~4 weeks, before removing it. This helps us ensure a smooth roll-out to publishers, there is no opt-out.

- Deleted on 2020-05-13T10:51:42.658Z

Q: What percentage of traffic will be kept at second-price auction and for how long? Can I opt-out?

A: We are planning to keep ~3% of your traffic for the first week post launch, then gradually reduce it to zero over the following ~4 weeks, before removing it. This helps us ensure a smooth roll-out to publishers, there is no opt-out.

- [REDACTED] 2019-09-23T17:40:58.805Z

I'll bookmark the language as soon as I am done eating pizza

- Deleted on 2020-05-13T10:51:42.658Z

I'll bookmark the language as soon as I am done eating pizza

- [REDACTED] 2019-09-23T18:03:32.941Z

Fabrizio, the language you are looking for is a couple of FAQ below

- Deleted on 2020-05-13T10:51:42.658Z

Fabrizio, the language you are looking for is a couple of FAQ below

- [REDACTED] 2019-09-23T18:03:34.375Z

https://docs.google.com/document/d/192EknxDPOpTjn9TYr_uEdhPdZzyWOqYOzSaZlH2GH0/edit?ts=5cadf3e9#bookmark=kix.uit3ldidht1

o https://docs.google.com/document/d/192EknxDPOpTjn9TYr_uEdhPdZzyWOqYOzSaZlH2GH0/edit?ts=5cadf3e9#bookmark=kix.uit3ldidht1

o https://drive.google.com/open?id=192EknxDPOpTjn9TYr_uEdhPdZzyWOqYOzSaZlH2GH0

• Deleted on 2020-05-13T10:51:42.658Z

https://docs.google.com/document/d/192EknxDPOpTjn9TYr_uEdhPdZzyWOqYOzSaZlH2GH0/edit?ts=5cadf3e9#bookmark=kix.uit3ldidiht1

o https://docs.google.com/document/d/192EknxDPOpTjn9TYr_uEdhPdZzyWOqYOzSaZlH2GH0/edit?ts=5cadf3e9#bookmark=kix.uit3ldidiht1

o https://drive.google.com/open?id=192EknxDPOpTjn9TYr_uEdhPdZzyWOqYOzSaZlH2GH0

• [REDACTED] 2019-09-23T18:03:55.588Z

Q: What floors apply on the share of traffic that remains second-price?

A: Although we are running tests to ensure a smooth migration, unified pricing rules and protections will apply on all traffic, including the small proportion of traffic that will remain on second-price. This means that if you configure a floor price using unified pricing rules, no impressions will transact below that floor price. Other factors may influence the floor price

(- see below if asked about more details)

Q: Will my previous Open Auction floors still apply on the slice of traffic that remains second price? . On the small portion of traffic that remains second price, the floor could be informed by a variety of factors, including (but not limited to) your previous Open Auction floors. The purpose of this is to monitor the performance of the launch, to ensure a smoother transition for publishers, and will only be maintained for a very brief period.

• Deleted on 2020-05-13T10:51:42.658Z

Q: What floors apply on the share of traffic that remains second-price?

A: Although we are running tests to ensure a smooth migration, unified pricing rules and protections will apply on all traffic, including the small proportion of traffic that will remain on second-price. This means that if you configure a floor price using unified pricing rules, no impressions will transact below that floor price. Other factors may influence the floor price

(- see below if asked about more details)

Q: Will my previous Open Auction floors still apply on the slice of traffic that remains second price? . On the small portion of traffic that remains second price, the floor could be informed by a variety of factors, including (but not limited to) your previous Open Auction floors. The purpose of this is to monitor the performance of the launch, to ensure a smoother transition for publishers, and will only be maintained for a very brief period.

• [REDACTED] 2019-09-23T18:04:49.406Z

Happy to take suggestions to improve

• Deleted on 2020-05-13T10:51:42.658Z

Happy to take suggestions to improve

• [REDACTED] 2019-09-23T18:05:14.455Z

I think we need summarize and include this in the external comms of tomorrow

• Deleted on 2020-05-13T10:51:42.658Z

I think we need summarize and include this in the external comms of tomorrow

• [REDACTED] 2019-09-23T18:05:30.491Z

But as a reminder, the reason for the current language , is to avoid publisher's frustration or perception they are loosing control of pricing on the holdback

• Deleted on 2020-05-13T10:51:42.658Z

But as a reminder, the reason for the current language, is to avoid publisher's frustration or perception they are loosing control of pricing on the holdback

- [REDACTED] 2019-09-23T18:09:36.603Z

I would just say " for the 3% of traffic no impressions will transact below the UPR"

- Deleted on 2020-05-13T10:51:42.658Z

I would just say " for the 3% of traffic no impressions will transact below the UPR"

- [REDACTED] 2019-09-23T18:10:31.568Z

we need to keep it simple

- Deleted on 2020-05-13T10:51:42.658Z

we need to keep it simple

- [REDACTED] 2019-09-23T18:12:05.371Z

Do we need to proactively talk about which floor apply in the holdback?

- Deleted on 2020-05-13T10:51:42.658Z

Do we need to proactively talk about which floor apply in the holdback?

- [REDACTED] 2019-09-23T18:12:21.926Z

we dont actually

- Deleted on 2020-05-13T10:51:42.658Z

we dont actually

- [REDACTED] 2019-09-23T18:12:39.304Z

but pubs will ask

- Deleted on 2020-05-13T10:51:42.658Z

but pubs will ask

- [REDACTED] 2019-09-23T18:12:47.669Z

That's what I thought too. I would not include in the email we send out

- Deleted on 2020-05-13T10:51:42.658Z

That's what I thought too. I would not include in the email we send out

- [REDACTED] 2019-09-23T18:13:18.610Z

thays fine

- Deleted on 2020-05-13T10:51:42.658Z

thays fine

- [REDACTED] 2019-09-23T18:13:33.270Z

Or were you suggesting to simplify the language in the FAQ?

- Deleted on 2020-05-13T10:51:42.658Z

Or were you suggesting to simplify the language in the FAQ?

- [REDACTED] 2019-09-23T18:13:33.692Z

but even FAQs must be simple

- Deleted on 2020-05-13T10:51:42.658Z

but even FAQs must be simple

- [REDACTED] 2019-09-23T18:13:46.583Z

simplify the language in the FAQ

- **Deleted on**2020-05-13T10:51:42.658Z

simplify the language in the FAQ

- [REDACTED] 2019-09-23T18:13:48.641Z

In which case, feel free to add the suggestion directly in the doc

- **Deleted on**2020-05-13T10:51:42.658Z

In which case, feel free to add the suggestion directly in the doc

- [REDACTED] 2019-09-23T18:13:53.254Z

I think it make sense

- **Deleted on**2020-05-13T10:51:42.658Z

I think it make sense

EXHIBIT 19

Message

From: Nitish Korula [nitish@google.com]
Sent: 9/23/2019 11:38:47 PM
To: Nirmal Jayaram [nirmaljayaram@google.com]

• **Nitish Korula**, 2019-09-23 16:38:47

So yes, did you guys ramp up?

• **Nitish Korula**, 2019-09-23 16:39:05

Vineet said he was working on a CL

• **Nitish Korula**, 2019-09-23 16:39:26

Coordinating with Tim, Ajay, etc.

• **Nirmal Jayaram**, 2019-09-23 16:39:28

Not sure myself. Pinging Ajay

• **Nirmal Jayaram**, 2019-09-23 16:39:51

Regarding the diff we have some theories but no easy way to validate

• **Nirmal Jayaram**, 2019-09-23 16:40:00

I'm not sure ramping up is going to solve it

• **Nitish Korula**, 2019-09-23 16:40:03

:(

• **Nitish Korula**, 2019-09-23 16:40:11

Fingers crossed

• **Nirmal Jayaram**, 2019-09-23 16:40:23

I think we may have to take a leap of faith that bernanke will react

• **Nitish Korula**, 2019-09-23 16:40:29

Are you and Ali ok with Wednesday morning?

• **Nirmal Jayaram**, 2019-09-23 16:40:52

I was personally more worried about the margins going down drastically today

• **Nirmal Jayaram**, 2019-09-23 16:41:02

But if that stabilizes tomorrow it would be ok

• **Nirmal Jayaram**, 2019-09-23 16:44:01

CL for ramping up hasn't been submitted yet

• **Nitish Korula**, 2019-09-23 17:10:18

Are we blocked on something?

• **Nirmal Jayaram**, 2019-09-23 17:14:26

not sure. Vineet might be waiting for some tests to pass

• **Nirmal Jayaram**, 2019-09-23 17:14:36

<a

href="https://www.google.com/url?q=https://critique.corp.google.com/%23review/270772131&sa=D&am

p;source=hangouts&ust=1569370477147000&usg=AFQjCNG-f0WHpLbFKOYQxjbNOBK5N8sDcg">https://critique.corp.google.com/#review/270772131

- **Nitish Korula**, 2019-09-23 17:14:40

I IMed him

- **Nitish Korula**, 2019-09-23 18:05:55

So apparently this margin issue seems to be happening more broadly?

- **Nitish Korula**, 2019-09-23 18:05:59

Even on 166, etc.?

- **Nirmal Jayaram**, 2019-09-23 18:08:10

Right. But it's about 2% worse in the launch candidate

- **Nitish Korula**, 2019-09-23 18:15:05

Really?

- **Nitish Korula**, 2019-09-23 18:15:09

They look pretty similar to me

- **Nitish Korula**, 2019-09-23 18:15:16

-19% GDN profit on 09/22

- **Nitish Korula**, 2019-09-23 18:15:41

for both 166 and launch experiment

- **Nitish Korula**, 2019-09-23 18:16:10

-47 to -57% GDN profit on 09/23 (partial day)

- **Nitish Korula**, 2019-09-23 18:18:29

166: <a

href="https://www.google.com/url?q=https://rasta.corp.google.com/%23/metrics?label%3D_:do6cUeQ7JvjHbHRaMB-Ms-

bp9mM&sa=D&source=hangouts&ust=1569374309175000&usg=AFQjCNE0UHsbpvWL6BVX8_gdObfuuE30mA">https://rasta.corp.google.com/#/metrics?label=_:do6cUeQ7JvjHbHRaMB-Ms-bp9mM

- **Nitish Korula**, 2019-09-23 18:19:25

Launch candidate: <a

href="https://www.google.com/url?q=https://rasta.corp.google.com/%23/metrics?label%3D_:QiMgFqkhxOGyrU5-

X9qIG8mM030&sa=D&source=hangouts&ust=1569374365375000&usg=AFQjCNFb06ZlYTYE6fKrrh6Pd_frcAVJKg">https://rasta.corp.google.com/#/metrics?label=_:QiMgFqkhxOGyrU5-

X9qIG8mM030 (where the confidence interval seems to contain the value for the bigger experiment)

- **Nitish Korula**, 2019-09-23 18:19:30

This is GDN profit on AdX web

- **Nitish Korula**, 2019-09-23 18:31:11

Vineet pinged ca-experiments-oncall and got approval for the rampup

- **Nirmal Jayaram**, 2019-09-23 18:45:16

Great

- **Nitish Korula**, 2019-09-23 18:45:21

In any event, I'm worried about what this does to Ali's 1 week of data

- **Nitish Korula**, 2019-09-23 18:45:29

(CL is submitted, BTW)

- **Nirmal Jayaram**, 2019-09-23 18:46:00

Let's look tomorrow. Hopefully the upward trendv stabilizes, then I'm not too worried because bernanke will adapt

- **Nitish Korula**, 2019-09-23 18:47:36

Oh, you think this is because we lost so much over a couple of days, then we react by bidding higher / taking less margin, and not that we're winning more again, that will reduce?

- **Nitish Korula**, 2019-09-23 18:47:44

Now* that?

- **Nirmal Jayaram**, 2019-09-23 18:49:00

It's not clear to me why the margin went down. One possibility is something changed with floors. What I meant is once this data gets into the bernanke pipeline, bernanke will lower bids and we will get to 68

- **Nirmal Jayaram**, 2019-09-23 18:49:33

We are thinking about shortening the learning during this transient phase so that it doesn't take forever to capture these trends

- **Nirmal Jayaram**, 2019-09-23 18:49:44

Note that the low margin has come with high revenue

- **Nitish Korula**, 2019-09-23 18:49:50

Yes

- **Nitish Korula**, 2019-09-23 18:49:53

Makes sense

- **Nirmal Jayaram**, 2019-09-23 18:50:02

So when bernanke lowers bids, we will make profit again but give up this surplus revenue

- **Nitish Korula**, 2019-09-23 18:50:07

I did notice the margin / revenue divergence (as expected)

- **Nirmal Jayaram**, 2019-09-23 18:51:18

Ya I would have been worried if we lost margin without gaining revenue

- **Nirmal Jayaram**, 2019-09-23 18:51:51

But this just seems like the market is changing and we need to react and can do so without much negative impact

- **Nitish Korula**, 2019-09-23 18:52:35

Fingers crossed :)

- **Nitish Korula**, 2019-09-23 18:52:42

I hope Ali is ok with this

EXHIBIT 20

Message

From: [REDACTED]
Sent: 12/5/2019 5:58:52 PM
To: Nitish Korula [nitish@google.com]

• [REDACTED], 2019-12-05 09:58:52

quick q?

• **Nitish Korula**, 2019-12-05 09:59:04

Shoot

• [REDACTED], 2019-12-05 10:00:02

I wasn't in on the buy/sell side debates for DRX DRS. Given whatever happened (including DRX sellside launch) how contentious do you think mediation chain (e.g. Admob DRS) might be on that front?

• [REDACTED], 2019-12-05 10:00:12

seems to me there is a clear case for sellside doing it

• [REDACTED], 2019-12-05 10:00:17

(if we want to do it)

• **Nitish Korula**, 2019-12-05 10:00:55

I'm not sure I see the connection between mediation chain and AdMob DRS;

• **Nitish Korula**, 2019-12-05 10:01:03

What is the mediation chain change you're thinking of?

• [REDACTED], 2019-12-05 10:01:10

this:

• [REDACTED], 2019-12-05 10:01:12

https://docs.google.com/document/d/1EhkNEe6Xfb3j1-cGgyv1IFyXlhpaxPCUEZdBsZTckUY/edit?ts=5de90fc6

• [REDACTED], 2019-12-05 10:01:29

essentially using DRS in this context to increase SOV by increasing cCPMs

• [REDACTED], 2019-12-05 10:02:54

I'm sort of a fan of this idea because it should increase SOV while basically keeping off-platform revenue near-neutral (Assuming another buyer near our price would pick up the query)

• **Nitish Korula**, 2019-12-05 10:03:19

Ah

• **Nitish Korula**, 2019-12-05 10:03:28

Yes, I anticipate this would be controversial 😊

• **Nitish Korula**, 2019-12-05 10:03:38

It may be a solvable problem

- [REDACTED], 2019-12-05 10:03:55

is this different than DFP DRS?

- **Nitish Korula**, 2019-12-05 10:04:02

And it would depend on how it's implemente

- **Nitish Korula**, 2019-12-05 10:04:03

d

- [REDACTED], 2019-12-05 10:04:29

I can see a concern being that it my incentivize 3p exchanges not to move to OB. but that's a different thing

- **Nitish Korula**, 2019-12-05 10:04:49

But the implementation will affect what it does to HOB, for example

- [REDACTED] 2019-12-05 10:04:56

yes for sure

EXHIBIT 21

Message

From: [REDACTED]
Sent: 7/28/2020 9:03:40 PM
To: Nitish Korula [nitish@google.com]

• [REDACTED] 2020-07-28 14:03:40

Hi Nitish, hope you're doing well. Last week -- hooray!

• Nitish Korula, 2020-07-28 14:03:49

I am, thanks

• Nitish Korula, 2020-07-28 14:03:52

How are you?

• [REDACTED] 2020-07-28 14:04:07

Doing okay!

• [REDACTED] 2020-07-28 14:04:19

Haven't seen the Ad Age story yet, but keeping an eye out.

• Nitish Korula, 2020-07-28 14:04:26

Thanks ☺

• [REDACTED] 2020-07-28 14:04:34

Do you have a second for a pview bid adjustment Q?

• Nitish Korula, 2020-07-28 14:04:49

shoot

• [REDACTED], 2020-07-28 14:07:09

I was bringing [REDACTED] to speed on the BI convo. We were discussing how, while these adjustments help publisher revenue, this presents a scenario where the highest bid does not in fact win the auction. Doesn't this ultimately compromises our fair and transparent first price auction strategy?

• Nitish Korula, 2020-07-28 14:07:22

Not really

• Nitish Korula, 2020-07-28 14:07:28

Because it's the highest net bid to the publisher

• Nitish Korula, 2020-07-28 14:07:38

And in this case, the effective bid to the publisher is lower

• Nitish Korula, 2020-07-28 14:08:04

If I submit a \$10 bid with a 50% chance of payment, the expected net bid is only \$5

• [REDACTED], 2020-07-28 14:08:26

It's the highest net bid to the publisher, but based on optimizations we don't share with the publisher to validate.

• Nitish Korula, 2020-07-28 14:09:38

The publisher has no way of validating anyway, right? Even Data Transfer files don't contain all the information (even setting aside pView), such as issues related to controls

- **Nitish Korula**, 2020-07-28 14:10:30

We don't claim that publishers can or should validate everything, because that's way too much complexity

- **Nitish Korula**, 2020-07-28 14:10:44

For example, on many queries, we don't even call out to certain bidders

- **Nitish Korula**, 2020-07-28 14:10:51

Because they can't handle all the traffic we get

- **Nitish Korula**, 2020-07-28 14:11:10

And we have a machine learning system that predicts which traffic they're likely to bid on

- **Nitish Korula**, 2020-07-28 14:11:23

The publisher has no way to validate that we're asking for bids on the 'right' traffic

- **Nitish Korula**, 2020-07-28 14:11:47

But ultimately, we have to pick only a subset of queries to request bids on, because the bidder just doesn't have the infrastructure for more

- **Nitish Korula**, 2020-07-28 14:11:55

(Even many of the large bidders)

- [REDACTED], 2020-07-28 14:14:27

Thanks for this context. The concern I'm thinking through: if the team publishes a help center article that explains pview, publishers (rightfully so) will be surprised to learn about this auction adjustment. And they aren't seeing it reflected in their DT file. So, we will start to hear our critics complain about Google not being transparent. Even in the move to first price, they highest bidder doesn't always win, and they're 'grading their on homework' by telling us that their machine learning is helping us make more money.

- [REDACTED] 2020-07-28 14:15:40

I hear your point about this being the highest bid to the publisher based on our auction optimizations, but I worry about how publishers will respond to that notion.

- **Nitish Korula**, 2020-07-28 14:15:53

Every SSP has machine learning that helps make publishers more money - that's part of the core value prop of an SSP

- [REDACTED] 2020-07-28 14:16:43

Right. I'm playing devil's advocate right now. But yes, that's true.

- **Nitish Korula**, 2020-07-28 14:16:51

And to be clear, this is very much why we always say 'highest *net* bid';

- **Nitish Korula**, 2020-07-28 14:16:55

It's like an eCPM

- **Nitish Korula**, 2020-07-28 14:17:41

And it's a relatively easy thing to justify - we shouldn't make a big deal out of the ML

- **Nitish Korula**, 2020-07-28 14:18:15

We penalize creatives that frequently fail to render, so a publisher doesn't lose money by selecting an ad that doesn't actually result in a payment to them

• [REDACTED] 2020-07-28 14:18:36

Because pubs don't see it that way in their DT file, I'd imagine push back on that

• [REDACTED], 2020-07-28 14:19:35

Maybe I'm overthinking it. Will review the help center language. I think we should be careful about language around highest bidder not winning.

• [REDACTED], 2020-07-28 14:19:51

Thank you as always for this context! It's helpful

• Nitish Korula, 2020-07-28 14:20:01

Yes, we can / should be careful around the language

• Nitish Korula, 2020-07-28 14:20:07

Hecten and Greg might be good people to review it with

• Nitish Korula, 2020-07-28 14:20:25

I would generally say something like

• Nitish Korula, 2020-07-28 14:20:34

We penalize creatives that frequently fail to render, so a publisher doesn't lose money if we select an ad that doesn't actually result in a payment to them

• Nitish Korula, 2020-07-28 14:20:59

This happens very rarely - well under 1% of auctions, and mostly for video, where complex creatives are more likely to result in rendering errors

• [REDACTED], 2020-07-28 14:21:37

Thank you, this is helpful! I know [REDACTED] had concerns with getting too specific on less than 1%.

• [REDACTED] 2020-07-28 14:21:49

For me, that point is very helpful

• Nitish Korula, 2020-07-28 14:22:28

We could consider using that in comms rather than in the help center, if that would make a difference

• Nitish Korula, 2020-07-28 14:23:03

(I recognize [REDACTED]'s concern, because we're thinking of deprecating this entire thing and replacing it by something simpler, but which could apply more broadly to other areas where errors are common)

• Nitish Korula, 2020-07-28 14:23:15

The simpler thing would also be easier to be transparent about

• Nitish Korula, 2020-07-28 14:23:44

But we don't have that yet

• Nitish Korula, 2020-07-28 14:23:49

Do we need to publish a HC article?

• [REDACTED] 2020-07-28 14:24:11

That's my question too

• [REDACTED] 2020-07-28 14:24:23

I'm not sure why we're rushing the HC article before the BI convo.

• Nitish Korula, 2020-07-28 14:24:33

This seems like a situation where actually having PM/Eng talk to BI may be worth it because we can explain it in a clear way that comes across as non-defensive, obviously providing value to them, etc.

- [REDACTED], 2020-07-28 14:24:40

Especially if changes may be made to this in the future.

- [REDACTED], 2020-07-28 14:24:50

I agree with you

- [REDACTED], 2020-07-28 14:25:13

Will speak with [REDACTED] and better understand the need of the HC article.

- [REDACTED], 2020-07-28 14:25:38

As you know, these HC can create news cycles. Seems like an unnecessary risk right now

- **Nitish Korula**, 2020-07-28 14:26:29

Yeah, +1

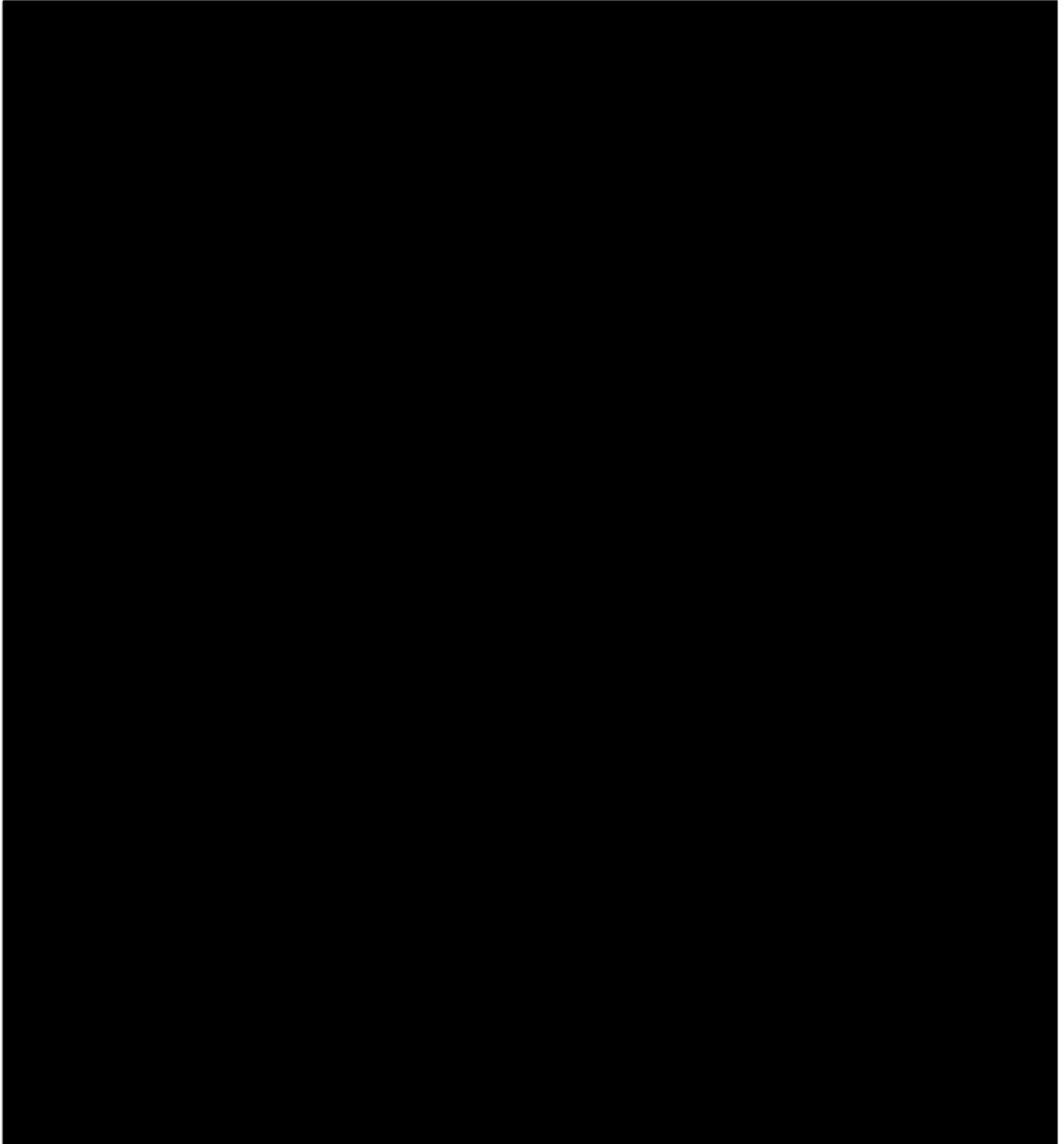
- [REDACTED], 2020-07-28 14:26:40

thanks nitish!

EXHIBIT 22

Message

From: ridhia@google.com [ridhia@google.com]
Sent: 1/31/2023 11:05:03 PM
To: ridhia@google.com; mpal@google.com; nonglisa@google.com; ardianp@google.com; sbelov@google.com; pauljensen@google.com; kahlon@google.com; rahulkooverjee@google.com; arunnair@google.com; kleber@google.com; do-not-reply-bot@systemgserviceaccount.com
Subject: AAAAdy26nOc-MBI-THREADED:k7VRftFiKNU%%2023-01-31T04:05:03.852175



--> hence the question

[REDACTED] February 1, 2023 at 1:19:04 PM UTC

I believe that pull request on HOB was merged into the main explainer? @Paul Jensen

[REDACTED] February 1, 2023 at 1:21:50 PM UTC

[REDACTED] February 1, 2023 at 1:22:42 PM UTC

It's also mentioned in https://github.com/WICG/turtledove/blob/main/Proposed_First_FLEDGE_OT_Details.md
https://github.com/WICG/turtledove/blob/main/Proposed_First_FLEDGE_OT_Details.md

[REDACTED] February 1, 2023 at 1:22:55 PM UTC

Yup.

[REDACTED] February 1, 2023 at 1:23:48 PM UTC

@ [REDACTED] is your question on use cases still open?

[REDACTED] February 1, 2023 at 1:32:38 PM UTC

[REDACTED] February 1, 2023 at 1:44:55 PM UTC

[REDACTED] - HOB is now part of the main explainer

[REDACTED] February 1, 2023 at 1:58:17 PM UTC

[REDACTED] February 1, 2023 at 2:00:57 PM UTC

[REDACTED] February 1, 2023 at 2:02:36 PM UTC

[REDACTED] February 1, 2023 at 2:03:06 PM UTC

Correct.

[REDACTED] February 1, 2023 at 2:06:21 PM UTC

[REDACTED] February 1, 2023 at 2:08:18 PM UTC

[REDACTED] February 1, 2023 at 2:08:38 PM UTC

[REDACTED] February 1, 2023 at 2:09:02 PM UTC

[REDACTED] fyi on this discussion

[REDACTED] February 1, 2023 at 2:13:33 PM UTC

FWIW, our pCounsel has said [REDACTED]

Redacted - Privilege

Redacted - Privilege

Updated on February 1, 2023 at 2:14:25 PM UTC

FWIW, our pCounsel has said [REDACTED]

Redacted - Privilege

Redacted - Privilege

[REDACTED] February 1, 2023 at 2:15:41 PM UTC

[REDACTED] February 1, 2023 at 2:17:56 PM UTC

[REDACTED] February 1, 2023 at 2:18:30 PM UTC

[REDACTED]

[REDACTED]

[REDACTED] February 1, 2023 at 2:20:10 PM UTC

Agreed. But whatever the roles/legal requirements, HOB has a clear mathematical definition which we need to stick to.

[REDACTED] February 1, 2023 at 2:20:17 PM UTC

We should perhaps discuss more offline on the ads side.

Updated on February 1, 2023 at 2:20:32 PM UTC

We should perhaps discuss more offline on the ads side in a smaller group

[REDACTED] February 1, 2023 at 7:33:36 PM UTC

Is there any detail I can read up on how HOB is getting used?

[REDACTED] February 1, 2023 at 7:33:46 PM UTC

Also, [REDACTED] [REDACTED] for vis on the Rb side

[REDACTED] February 1, 2023 at 8:57:08 PM UTC

[REDACTED] – [REDACTED]

[REDACTED].

[REDACTED] February 1, 2023 at 8:57:25 PM UTC

This is achieved by training the pricing models predicting bid landscape on different slices of inventory

[REDACTED] February 2, 2023 at 12:25:05 PM UTC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] February 2, 2023 at 12:48:36 PM UTC

[REDACTED]

[REDACTED]

[REDACTED] February 2, 2023 at 1:42:11 PM UTC

[REDACTED]

[REDACTED] February 2, 2023 at 1:45:12 PM UTC

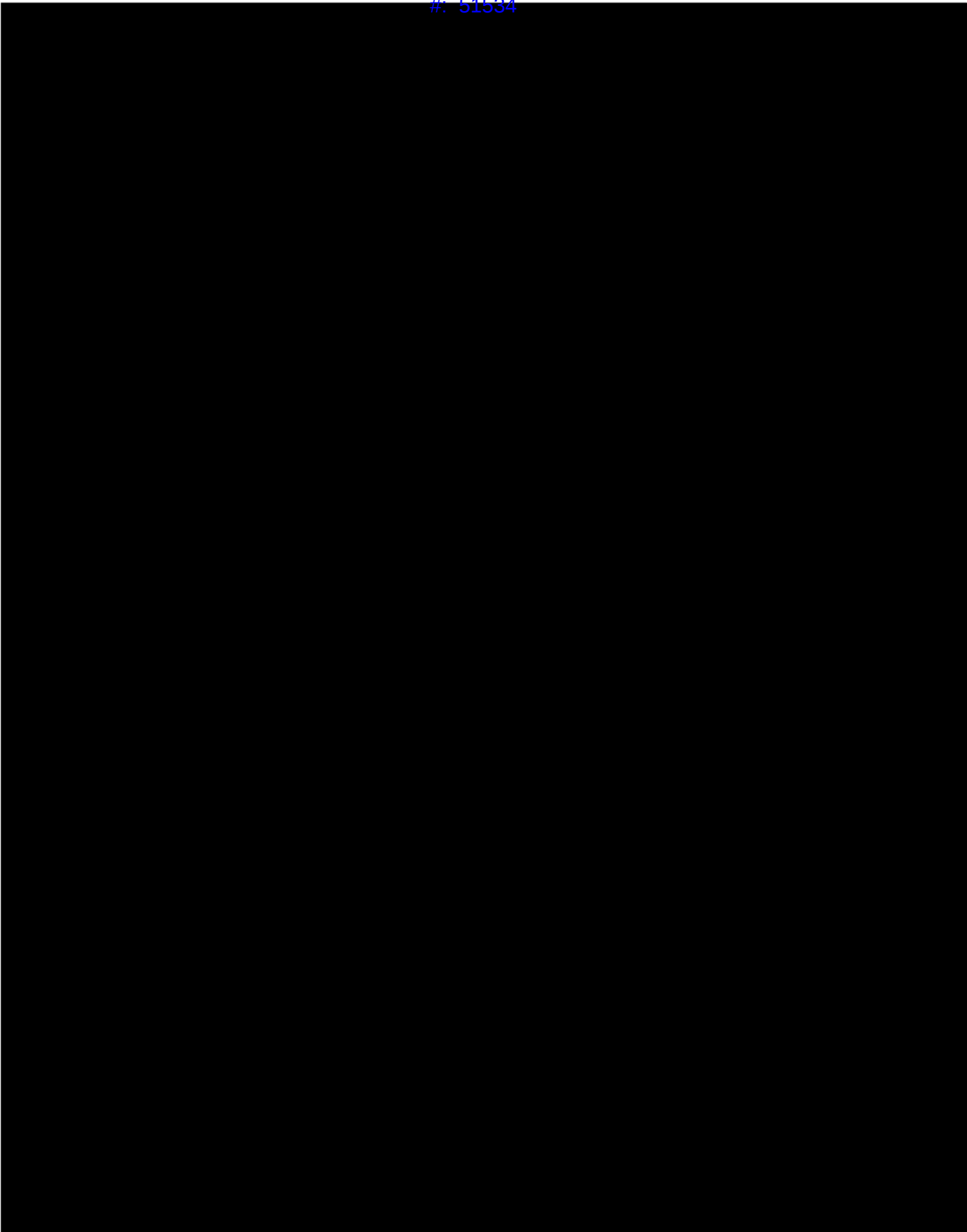
[REDACTED]

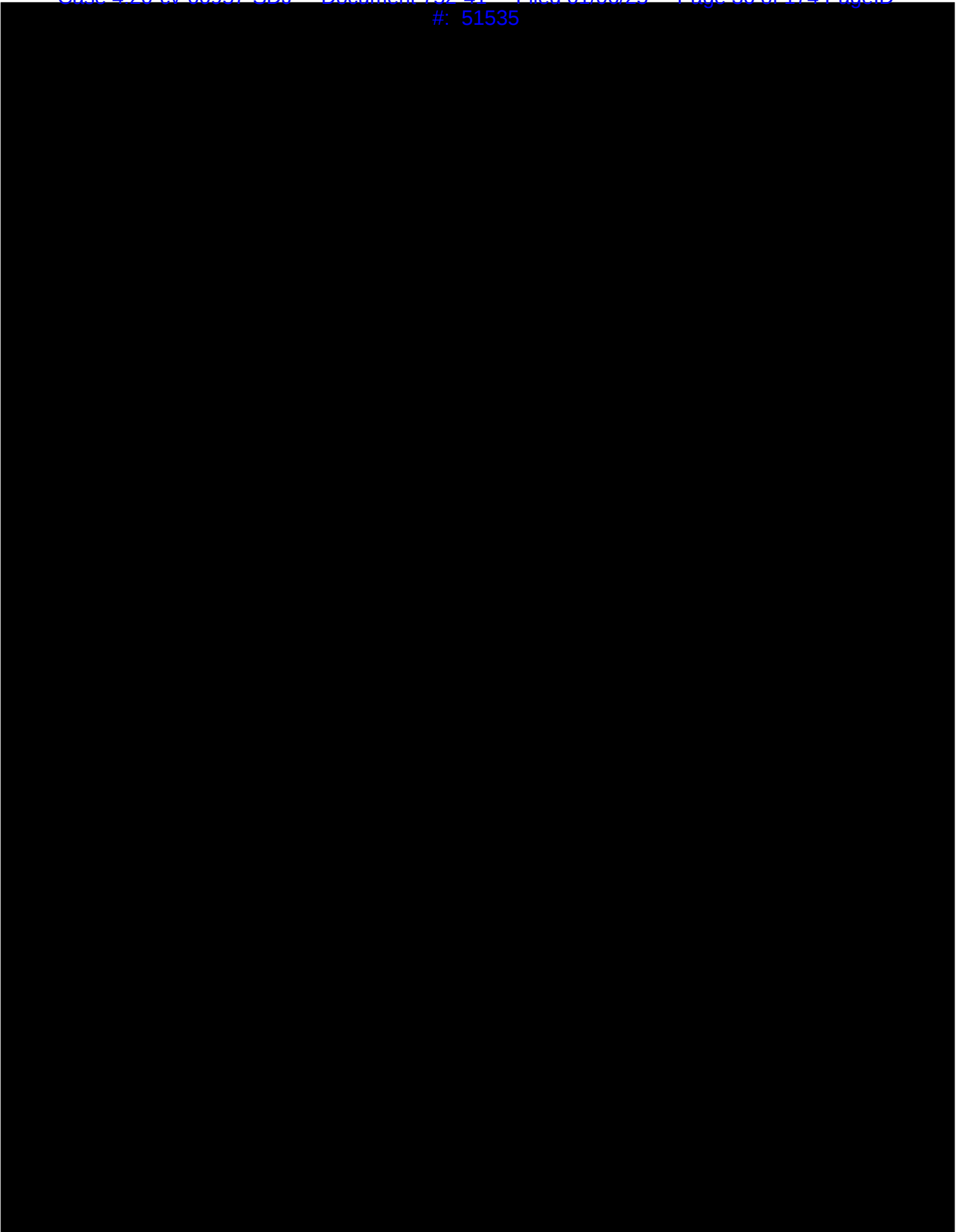
[REDACTED]

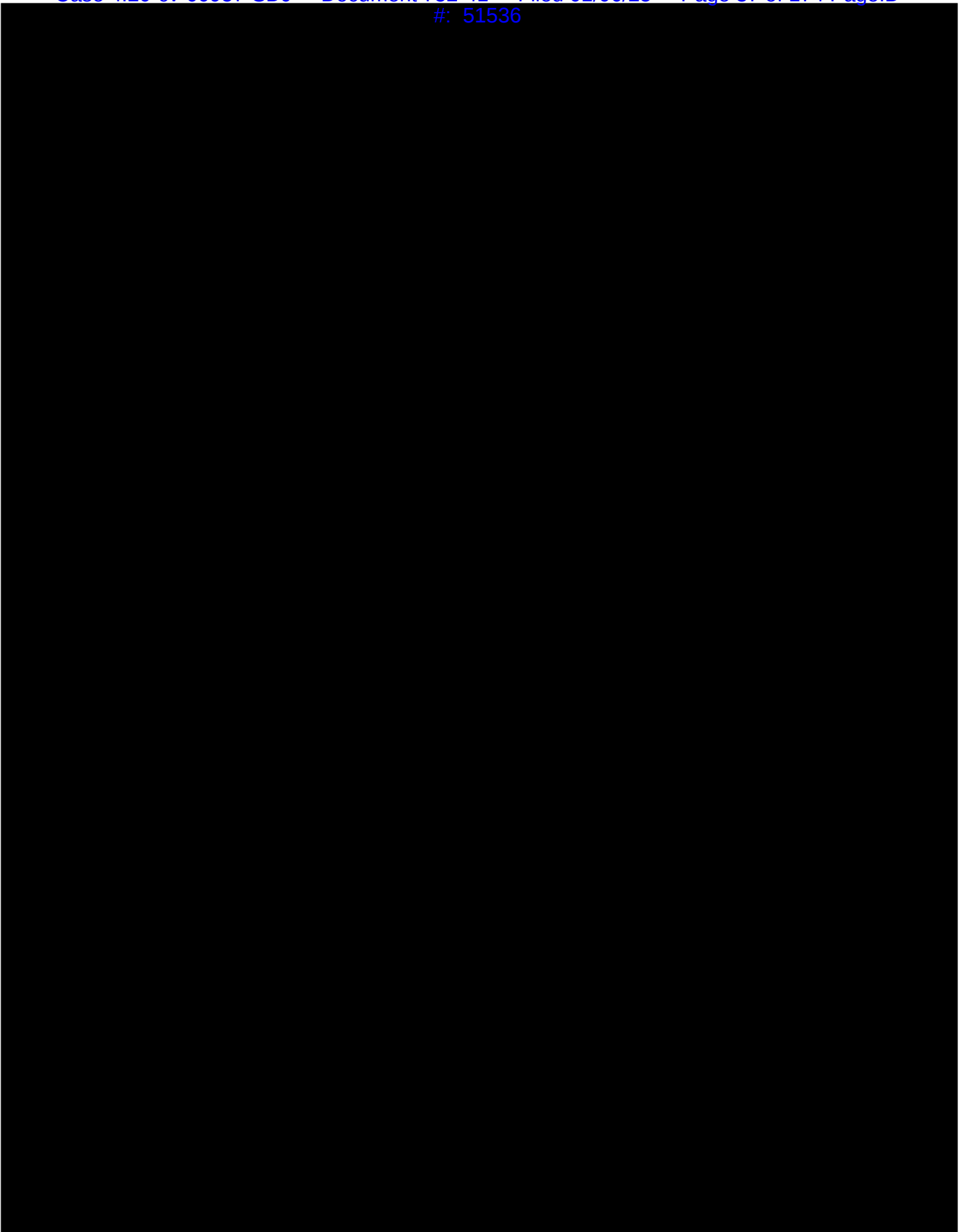
[REDACTED] February 2, 2023 at 3:00:44 PM UTC

[REDACTED]

[REDACTED]







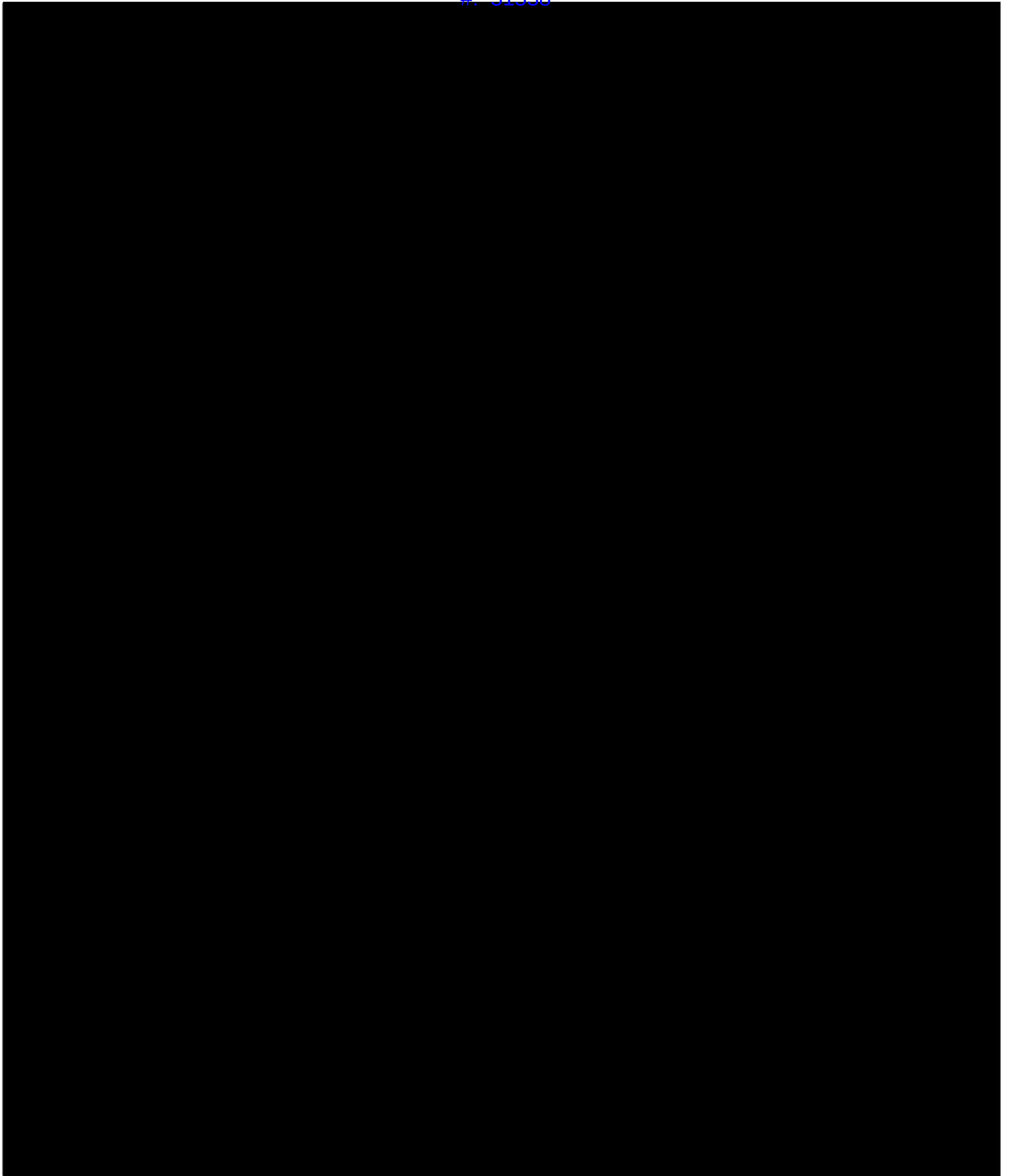
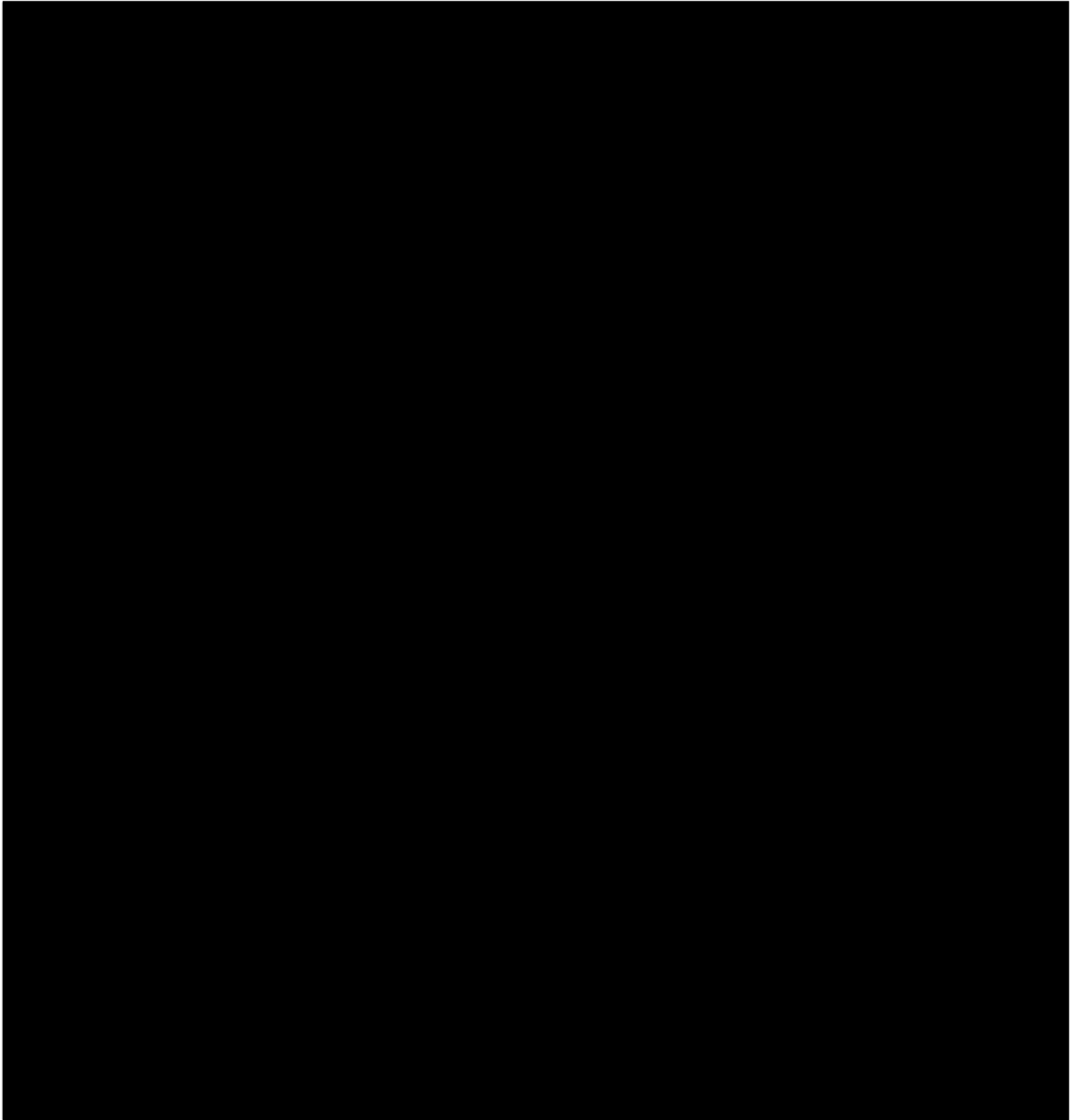
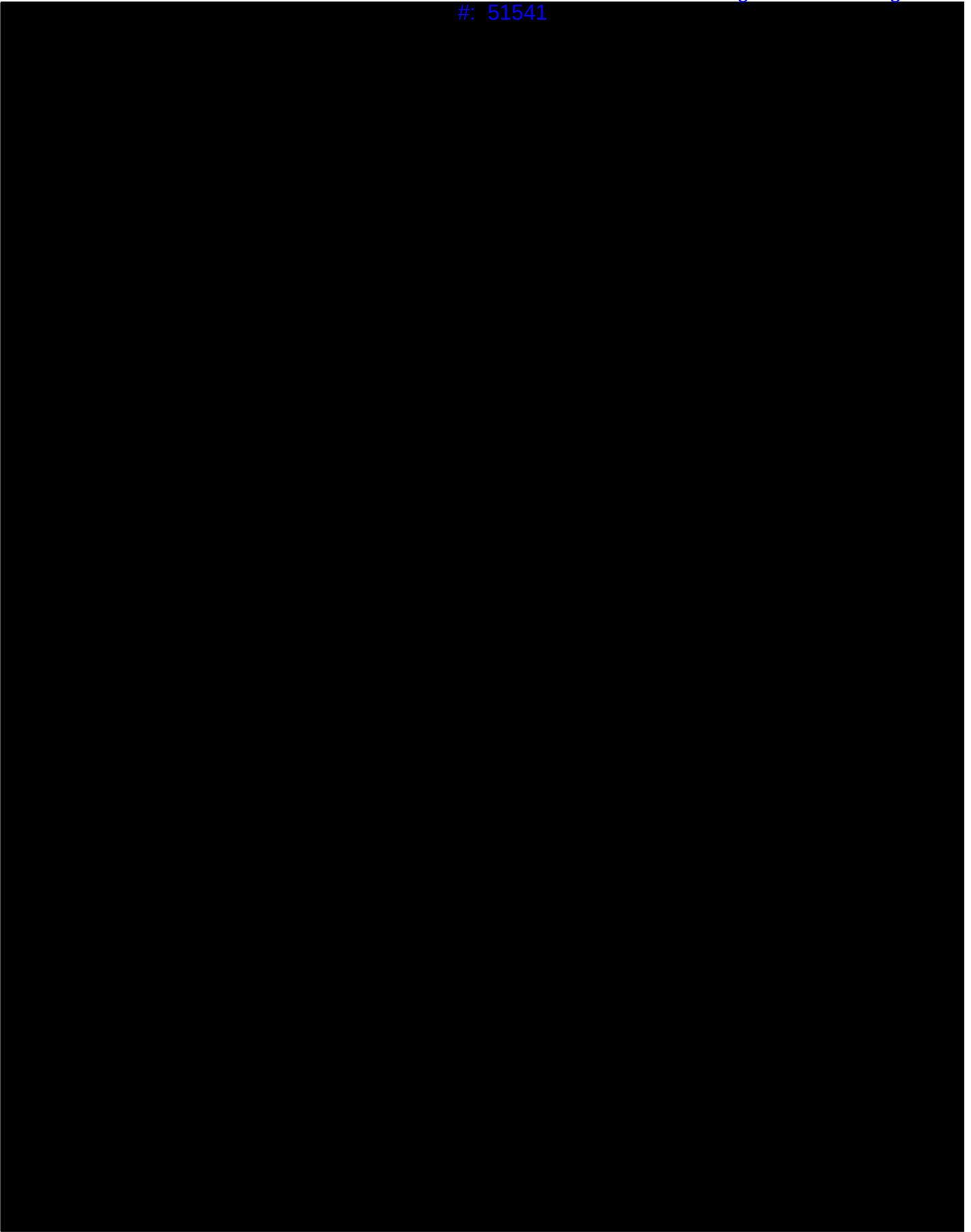


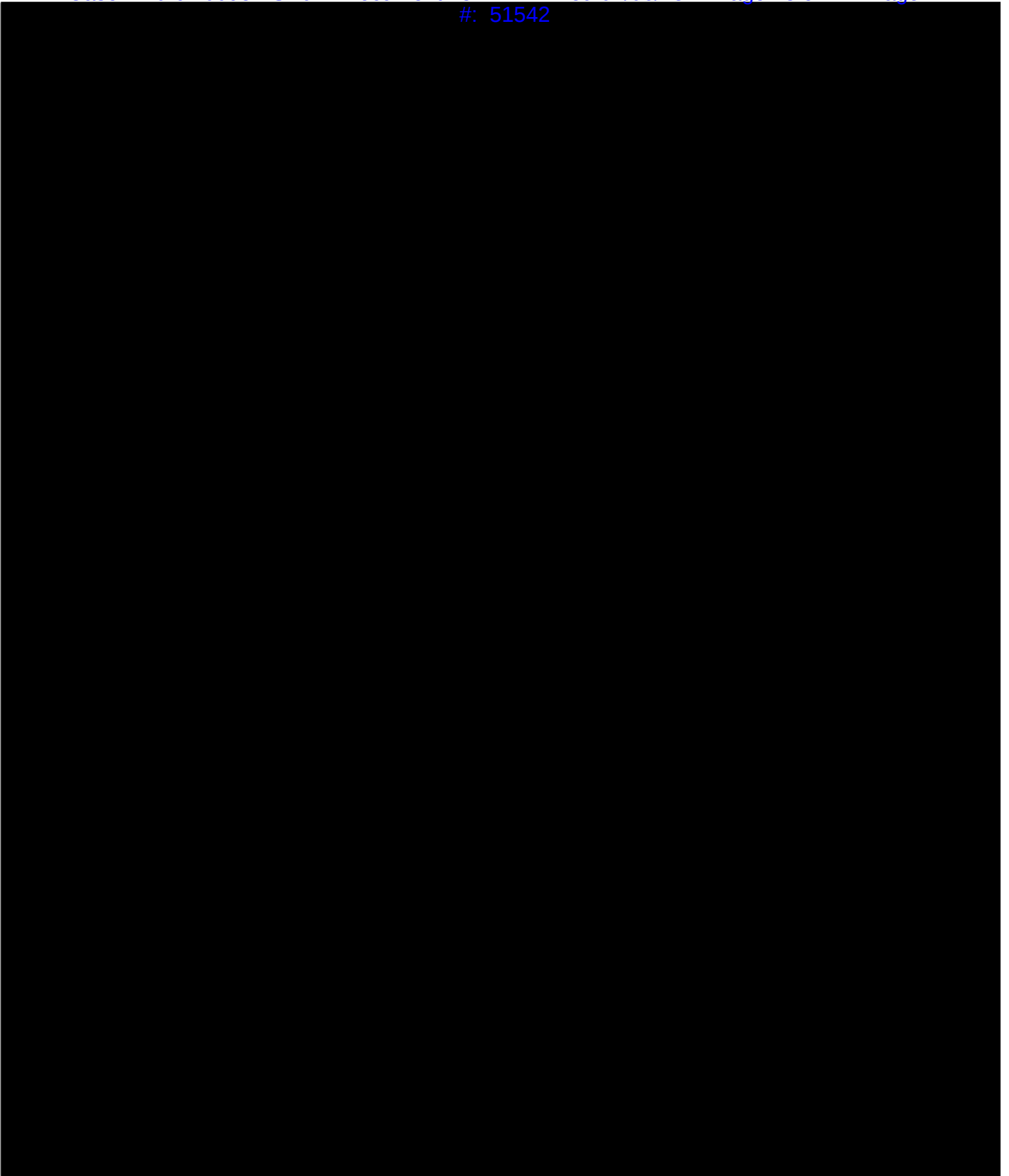
EXHIBIT 23

Message

From: [REDACTED]
Sent: 2/22/2023 7:37:08 PM
To: [REDACTED]
Subject: AAAAruvE9f0-MBI-THREADED:OHcFub8sWO8%%2023-02-22T00:37:08.549007







Updated on February 22, 2023 at 8:13:36 PM UTC

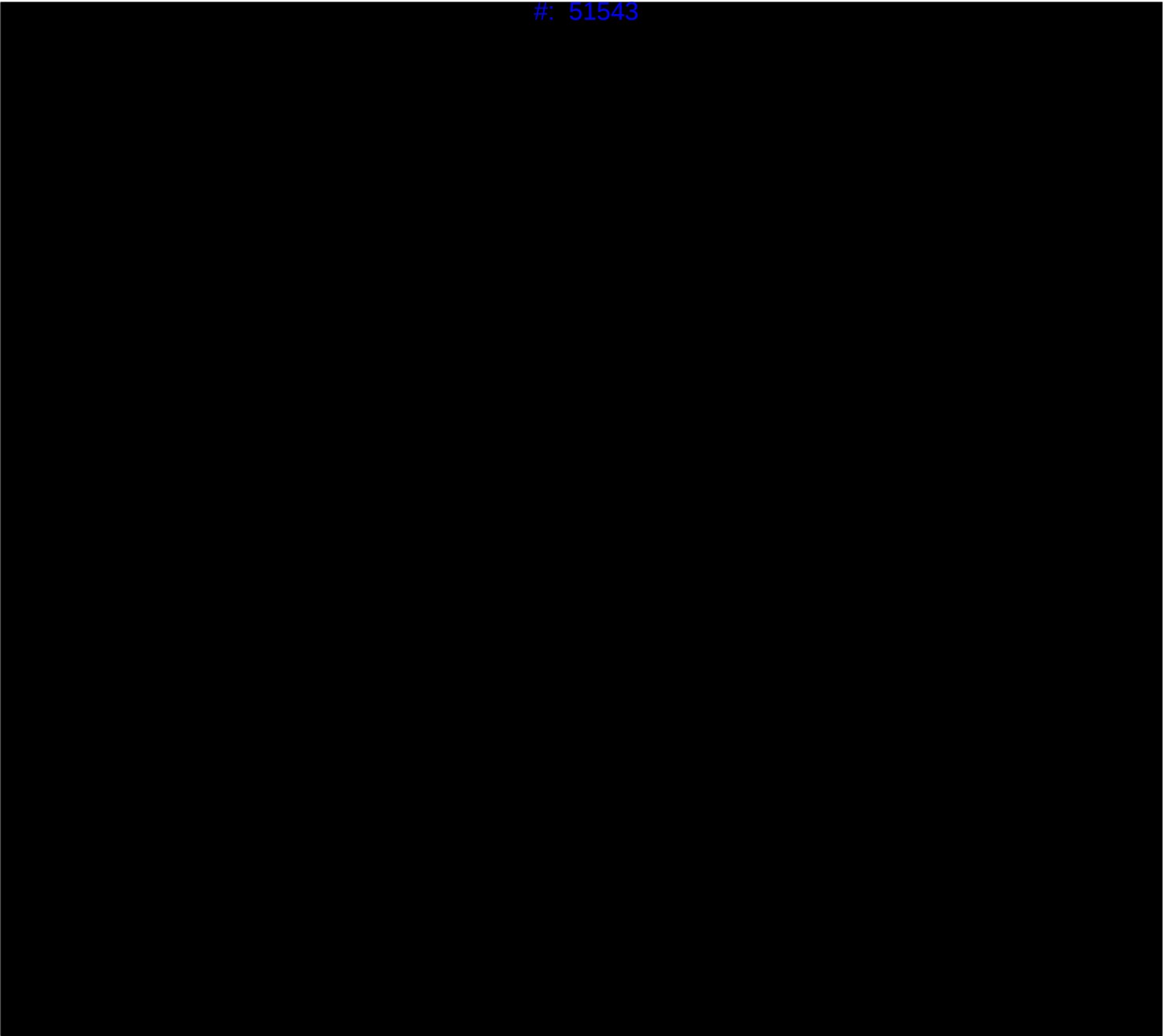


EXHIBIT 24

Message

From: [REDACTED]
Sent: 2/15/2023 7:19:19 PM
To: [REDACTED]; glevitte@google.com
Subject: 9dDhgAAAAE-MBI-FLAT:2023-02-15T00:19:19.915439

[REDACTED] February 15, 2023 at 7:19:19 PM UTC

Just did a quick (but more thorough) spot check: ~ [REDACTED]
[REDACTED]

[REDACTED] February 15, 2023 at 7:19:27 PM UTC

huh this legal hold is new 😊

glevitte@google.com February 15, 2023 at 7:23:05 PM UTC

re hold - you mean the chat history? yep, new world

[REDACTED] February 15, 2023 at 7:23:37 PM UTC

Yup, it forced me to resend my message with history on

glevitte@google.com February 15, 2023 at 7:23:45 PM UTC

ah, so you're on the list too

glevitte@google.com February 15, 2023 at 7:24:06 PM UTC

seems to be anyone who's touching stuff with competition risk, including most of the leads

glevitte@google.com February 15, 2023 at 7:24:20 PM UTC

I assume you got an email about it?

[REDACTED] February 15, 2023 at 7:26:25 PM UTC

ah no sorry - I think it's just because I pinged you (there's a fun little speech bubble next to your name:

<https://screenshot.googleplex.com/9umKrGyivDYeYtH>)

<https://screenshot.googleplex.com/9umKrGyivDYeYtH>

glevitte@google.com February 15, 2023 at 7:27:53 PM UTC

ah, yeah I added that manually so folks would know

glevitte@google.com February 15, 2023 at 7:28:22 PM UTC

but [REDACTED] and I think several others have the same thing (albeit they probably haven't added the disclosure)

glevitte@google.com February 15, 2023 at 7:29:05 PM UTC

sounds like you aren't on the list yet

[REDACTED] February 16, 2023 at 4:24:11 PM UTC

QQ - do you know if anything ever happened with [REDACTED]
[REDACTED]

glevitte@google.com February 16, 2023 at 5:04:53 PM UTC

I don't think this ever materialized

glevitte@google.com February 16, 2023 at 5:05:28 PM UTC

[REDACTED] would probably know better than me if they think this is still a good idea

EXHIBIT 25

Message

From: [REDACTED]
Sent: 3/10/2023 3:09:09 PM
To: [REDACTED]; codywilson@google.com
Subject: pUGY4gAAAAE-MBI-FLAT:2023-03-09T20:09:09.075231

[REDACTED] March 10, 2023 at 3:09:09 PM UTC
Thinking more on our [REDACTED]

[REDACTED] March 10, 2023 at 3:09:23 PM UTC
Likely more work than had first occurred to me actually

[REDACTED] March 10, 2023 at 3:09:38 PM UTC
Can explain more whenever

[REDACTED] March 10, 2023 at 3:09:57 PM UTC
Def a full quarter at fastest I'd guess

[REDACTED] March 10, 2023 at 3:11:08 PM UTC
To get an experiment running or to get a fully fledged product out the door

[REDACTED] March 10, 2023 at 3:11:23 PM UTC
Door*

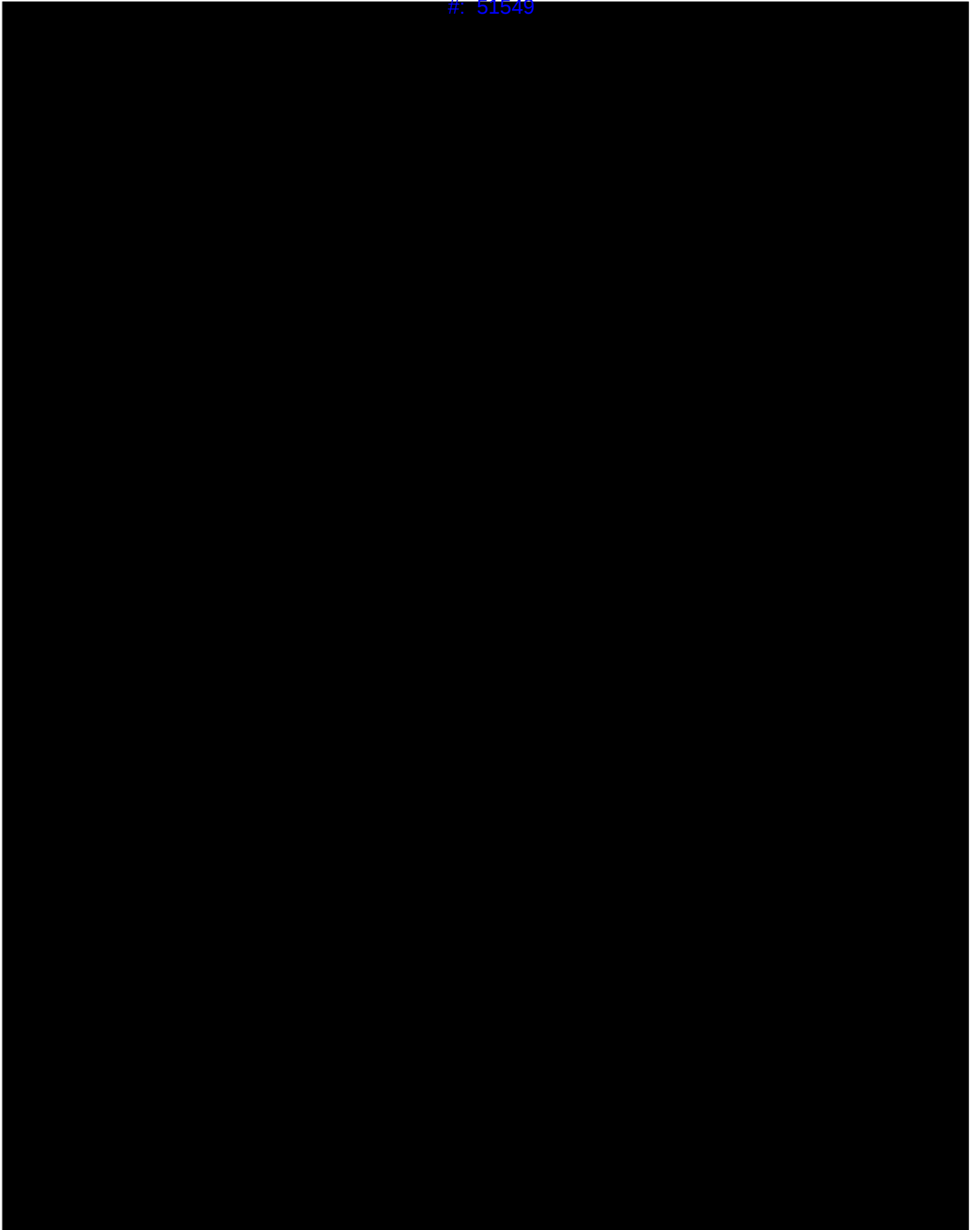
[REDACTED] March 10, 2023 at 3:11:34 PM UTC
to build the infra required for experiment

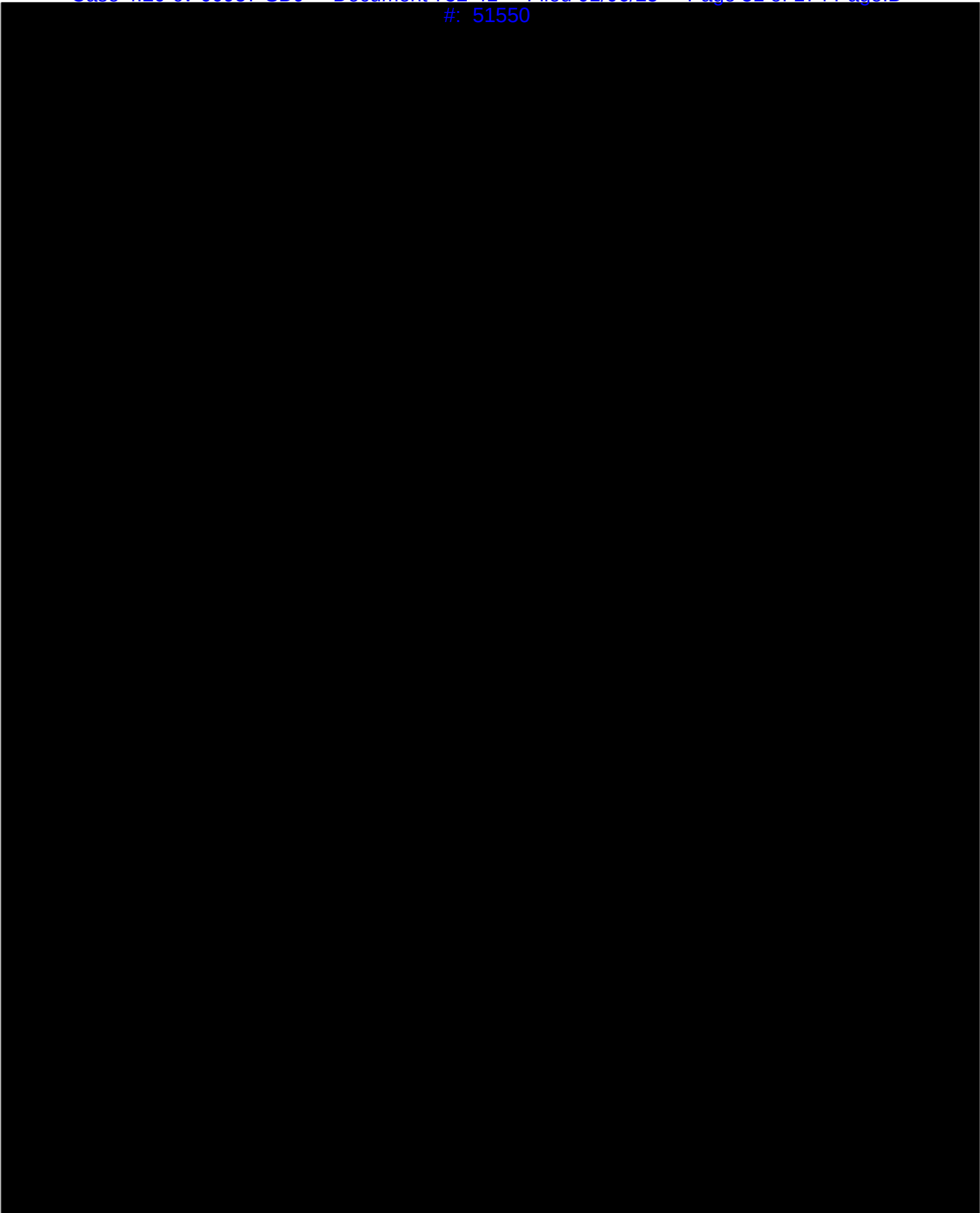
[REDACTED] March 10, 2023 at 3:12:07 PM UTC
it will be hard to avoid production costs even when running in an experiment

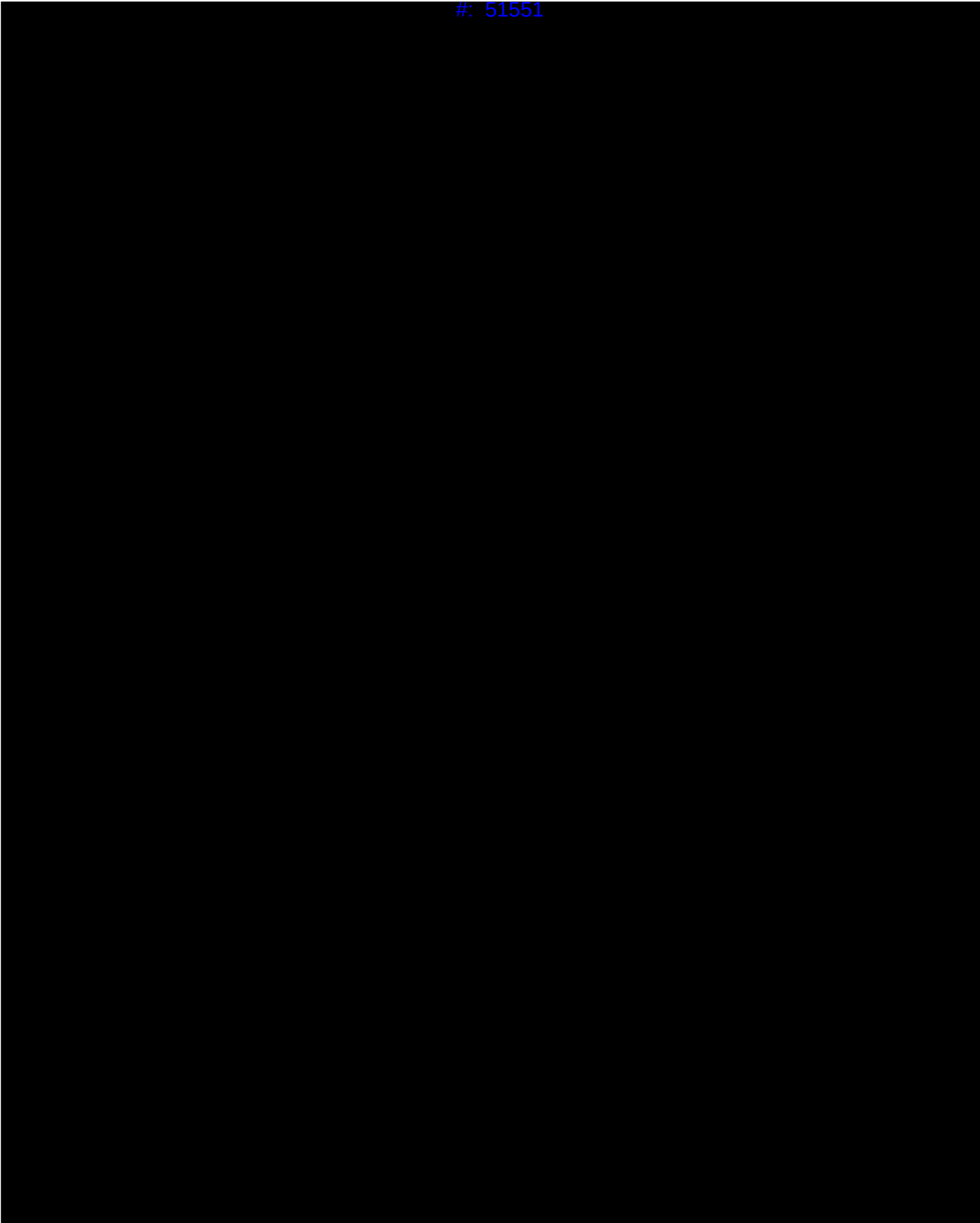
[REDACTED] March 10, 2023 at 3:12:21 PM UTC
(cost of prod development)

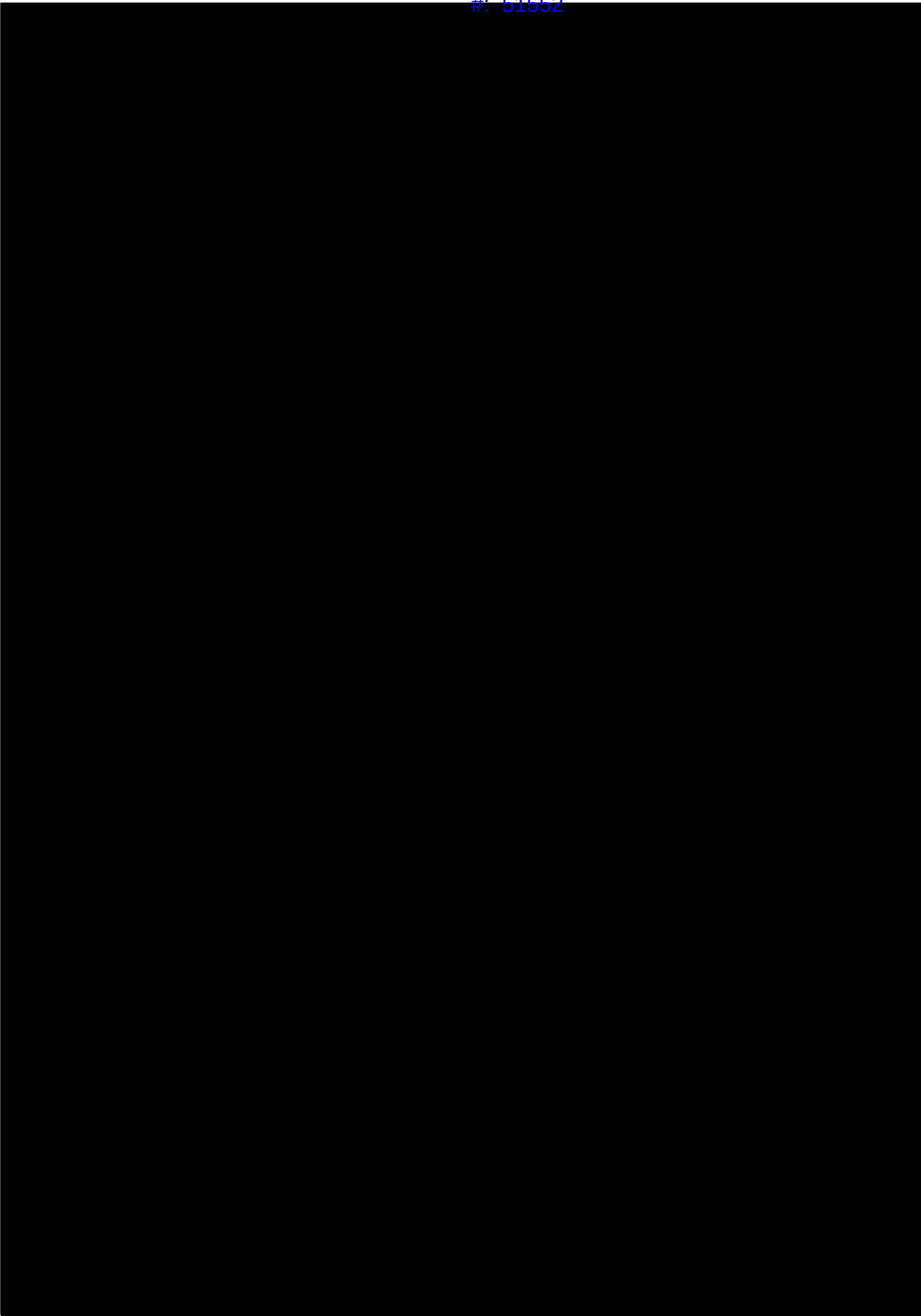
[REDACTED] March 10, 2023 at 3:16:55 PM UTC
another thought: [REDACTED]
[REDACTED]

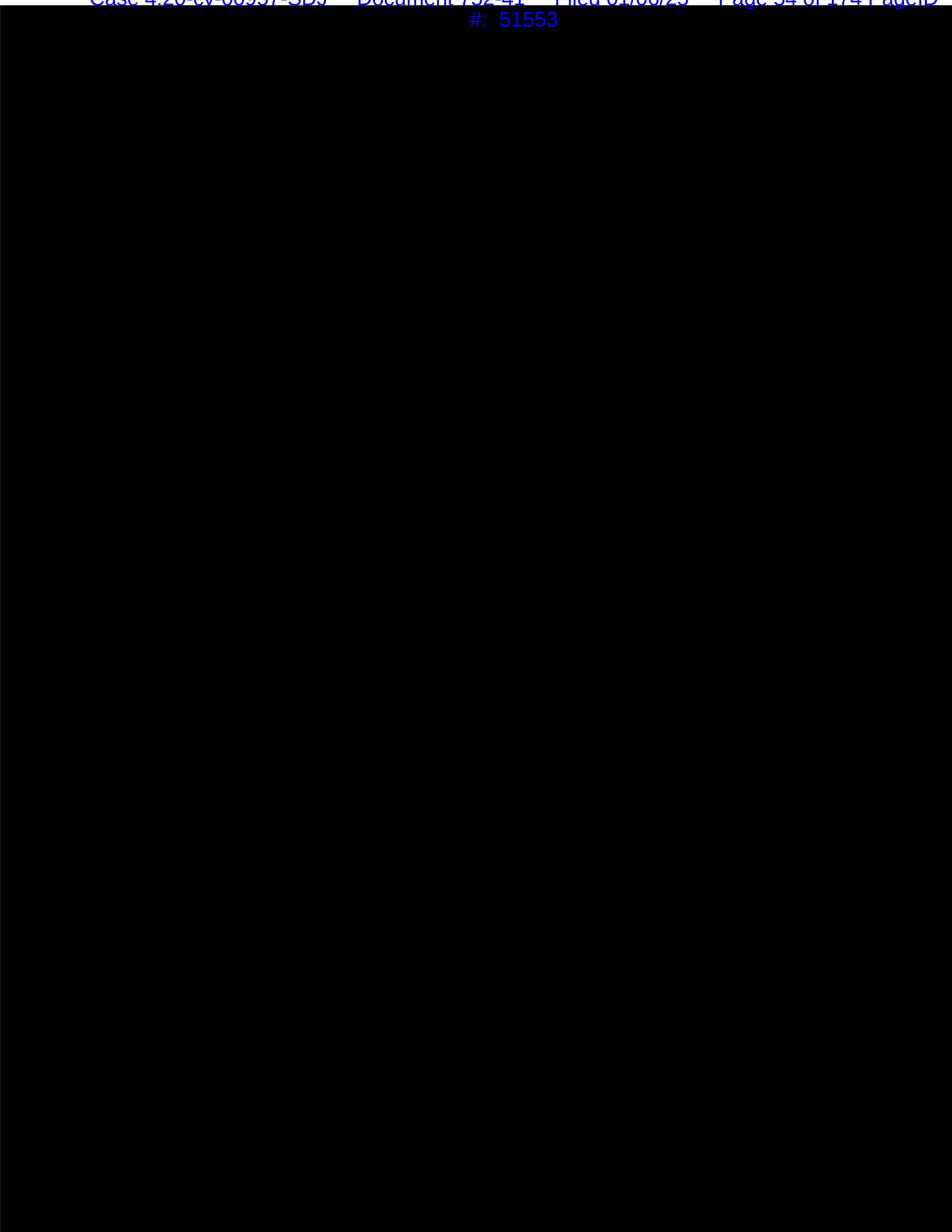
[REDACTED] March 10, 2023 at 3:29:15 PM UTC











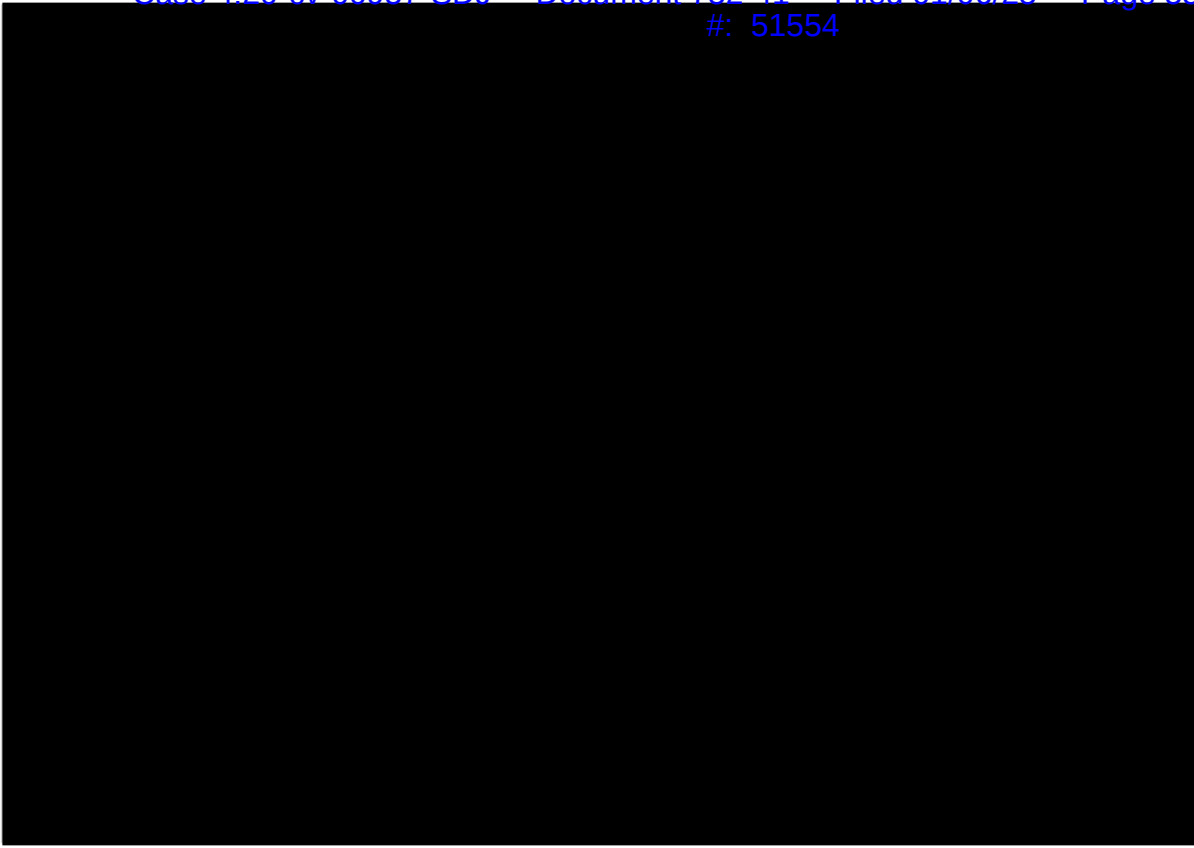
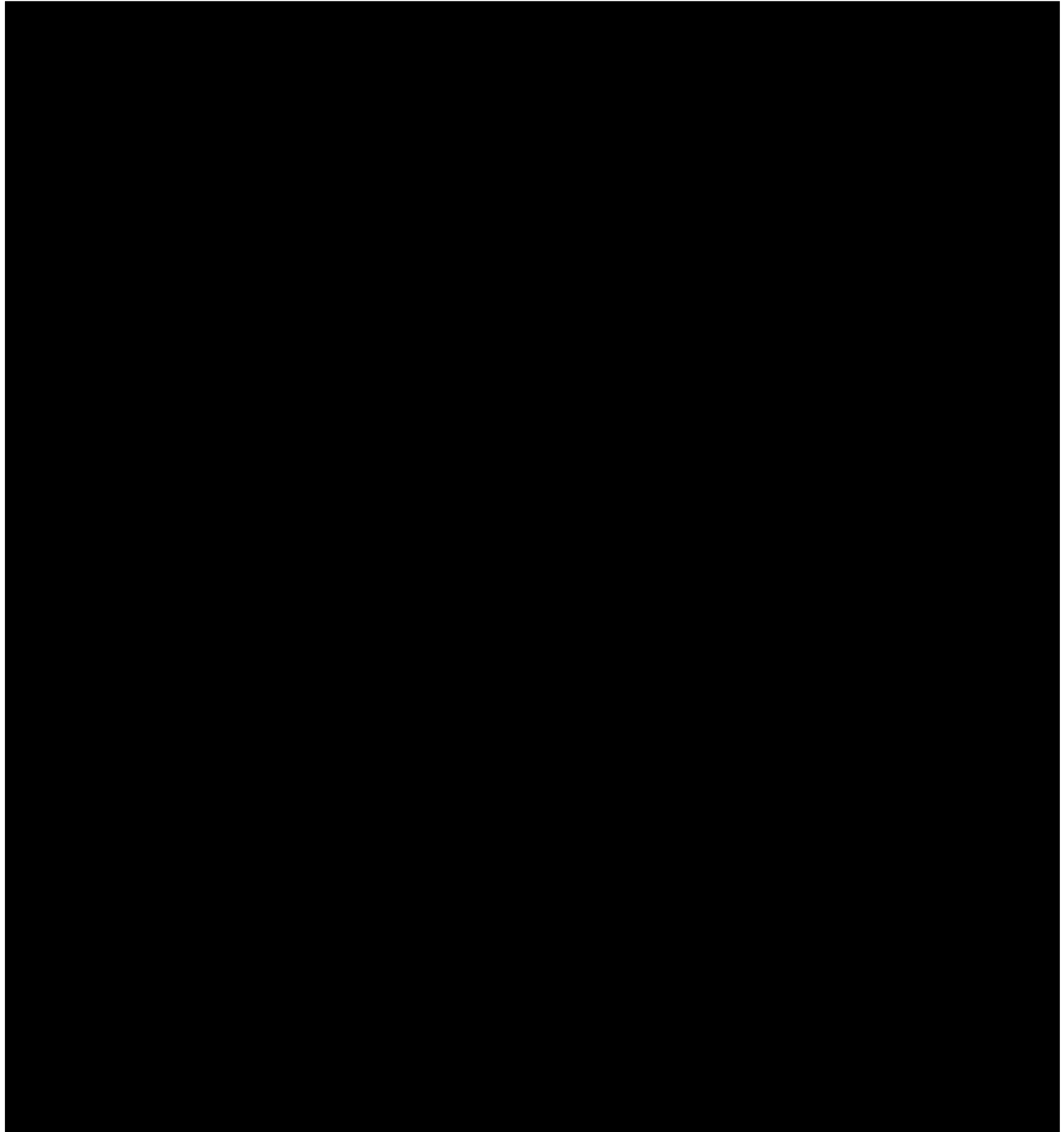
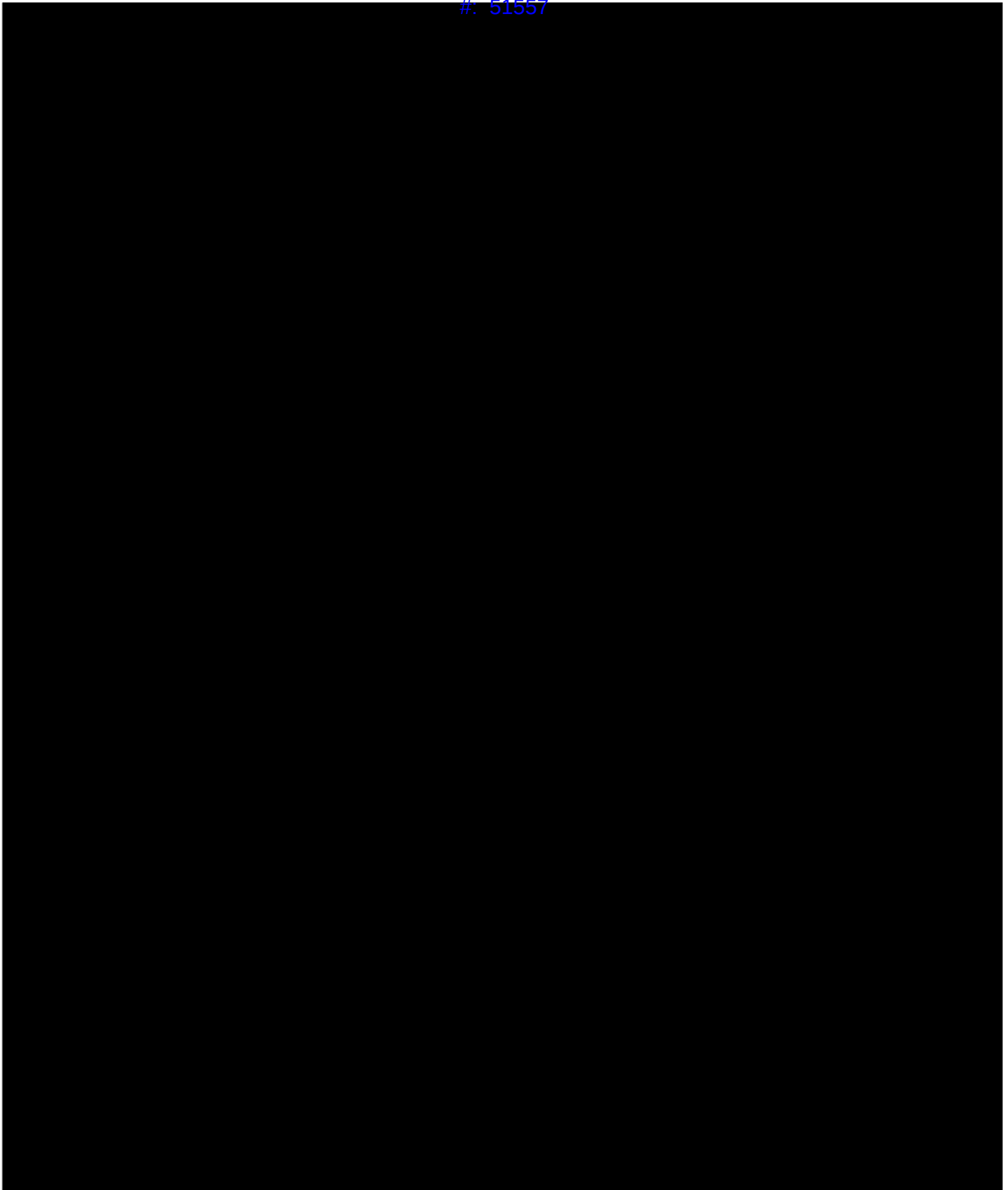


EXHIBIT 26

Message

From: [REDACTED]
Sent: 2/16/2023 9:51:55 PM
To: [REDACTED]
Subject: AAAAruvE9f0-MBI-THREADED:q8do5I08B5U%%2023-02-16T02:51:55.089151





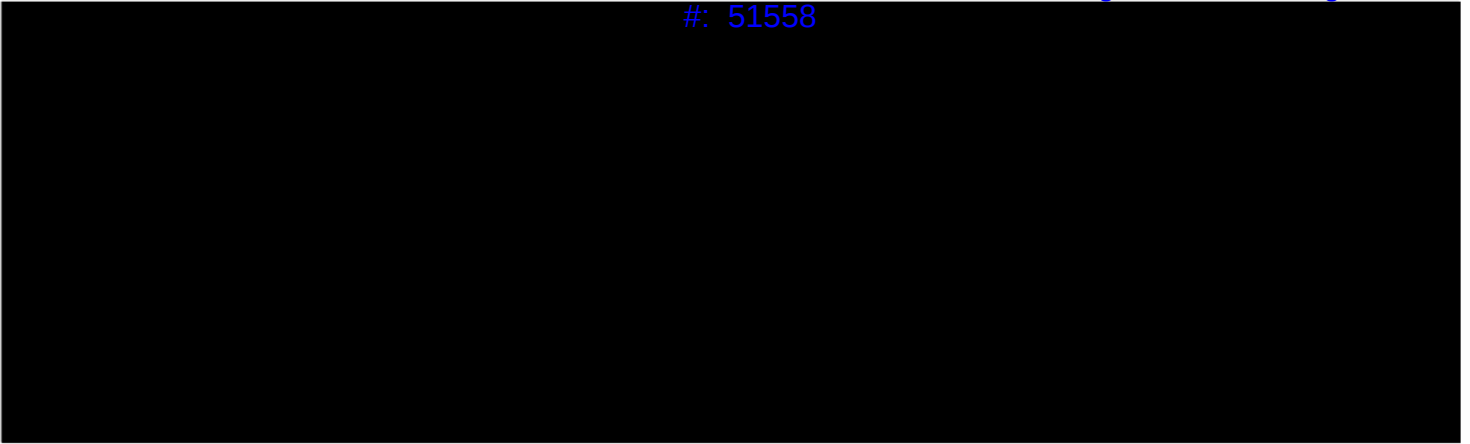


EXHIBIT 27

51560
Metadata

Begin Bates	GOOG-AT-MDL-B-004290028
End Bates	GOOG-AT-MDL-B-004290029
Custodian	Stewart, Adam
File Name	
Extension	eml
Author	
Subject	AAAAZhZnT2Q-MBI-THREADED:qn8ap1PvQeQ%%2018-02-20T09:42:41.645935
Email Subject	AAAAZhZnT2Q-MBI-THREADED:qn8ap1PvQeQ%%2018-02-20T09:42:41.645935
Master Date	2/21/2018
OS Creation Date/Time	
OS Saved Date/Time	
Date Sent	2/21/2018
Time Sent	4:42:00 AM
Date Received	
Time Received	
Email Datetime Received	
Company	Alphabet, Inc.
From	
To	
Bcc	
Cc	
Volume Name	PROD084-003
CSV Confidentiality	CONFIDENTIAL
CSV Drive Collaborators	
CSV Drive Viewers	
CSV Other Beg Bates	
CSV Last Author	
CSV Organization	
CSV Produced In	
CSV Search Values	
CSV Spec No	
CSV_Gmail Thread Level 1	AAAAZhZnT2Q-MBI-THREADED:qn8ap1PvQeQ%%2018-02-20T09:42:41.645935
CSV DOJ Edoc Properties	Chat;Email
CSV Redacted	
CSV References	
CSV Folder Label	
CSV Original Path	
CSV Linked AttachmentID	
CSV Linked ParentID	

From: [REDACTED]
Sent: Wed 2/21/2018 4:42:42 AM (UTC)
To: [REDACTED]
Subject: AAAAZhZnT2Q-MBI-THREADED:qn8ap1PvQeQ%%2018-02-20T09:42:41.645935
Attachment: Screenshot 2018-02-20 at 20.40.14.png
Attachment: Screenshot 2018-02-20 at 20.40.14.png

[REDACTED] February 21, 2018 at 4:42:41 AM UTC

Which state is History toggle here? OFF or ON? For LTR i'd assume history if off when it is on the left, and on when it is on the right?

Screenshot 2018-02-20 at 20.40.14.png

Deleted on November 20, 2020 at 1:09:55 PM UTC

Which state is History toggle here? OFF or ON? For LTR i'd assume history if off when it is on the left, and on when it is on the right?

Screenshot 2018-02-20 at 20.40.14.png

[REDACTED] February 21, 2018 at 4:42:54 AM UTC

However, the toggle does not switch "History" on and off, it switches "Temporary" state off and on.

Deleted on November 20, 2020 at 1:09:55 PM UTC

However, the toggle does not switch "History" on and off, it switches "Temporary" state off and on.

[REDACTED] February 21, 2018 at 4:43:13 AM UTC

So while the toggle is OFF here, the history is ON.

Deleted on November 20, 2020 at 1:09:55 PM UTC

So while the toggle is OFF here, the history is ON.

[REDACTED] February 21, 2018 at 2:35:01 PM UTC

Thanks for mentioning this [REDACTED] ... I also find this very confusing.

Deleted on November 20, 2020 at 1:09:55 PM UTC

Thanks for mentioning this [REDACTED] ... I also find this very confusing.

[REDACTED] February 21, 2018 at 3:12:45 PM UTC

I thought of it as a stopwatch... if the stopwatch is enabled, that means the messages live for a limited time only.

Deleted on November 20, 2020 at 1:09:55 PM UTC

I thought of it as a stopwatch... if the stopwatch is enabled, that means the messages live for a limited time only.

[REDACTED] February 21, 2018 at 4:26:24 PM UTC

+1 to [REDACTED]'s observation.

Updated on February 21, 2018 at 4:26:46 PM UTC

+1 to [REDACTED]'s observation. Think of it this way: outside of Google, chats are likely to default to on-the-record, and you "turn on" the Snapchat-like forgetting feature.

Updated on February 21, 2018 at 4:27:02 PM UTC

+1 to [REDACTED]'s observation. Think of it this way: outside of Google, chats are likely to default to on-the-record, and you "turn on" the Snapchat-like forgetting feature. Unfortunately, Google's off-the-record default makes it feel really backwards, but in my case I got used to it.

Deleted on November 20, 2020 at 1:09:55 PM UTC

+1 to [REDACTED]'s observation. Think of it this way: outside of Google, chats are likely to default to on-the-record, and you "turn on" the Snapchat-like forgetting feature. Unfortunately, Google's off-the-record default makes it feel really backwards, but in my case I got used to it.

[REDACTED] February 21, 2018 at 5:18:07 PM UTC

+1 Yeah this always confuses me too. In the android app, history on is the stop watch crossed out. Which doesn't make sense to me, i feel the stop watch should be history, but i guess someone though that you were timing how long you keep the conversation off record? ;-)

Deleted on November 20, 2020 at 1:09:55 PM UTC

+1 Yeah this always confuses me too. In the android app, history on is the stop watch crossed out. Which doesn't make sense to me, i feel the stop watch should be history, but i guess someone thought that you were timing how long you keep the conversation off record? ;-)

February 21, 2018 at 5:40:06 PM UTC

Think of it as a countdown for self-disappearing messages. That's what works for me. (I do think the UI around this needs to be re-thought, but I'm sure there are complex requirements. At least it's not buried, unlike classic Hangouts.)

Deleted on November 20, 2020 at 1:09:55 PM UTC

Think of it as a countdown for self-disappearing messages. That's what works for me. (I do think the UI around this needs to be re-thought, but I'm sure there are complex requirements. At least it's not buried, unlike classic Hangouts.)

February 21, 2018 at 5:42:26 PM UTC

it probably wouldn't be as confusing if it's not labeled as "toggle history" while you can see the "history on/off" text right above it

Deleted on November 20, 2020 at 1:09:55 PM UTC

it probably wouldn't be as confusing if it's not labeled as "toggle history" while you can see the "history on/off" text right above it

EXHIBIT 28

51564
Metadata

Begin Bates	GOOG-AT-MDL-008033073
End Bates	GOOG-AT-MDL-008033076
Custodian	Elissa Murphy
File Name	
Extension	eml
Author	sshank
Subject	AAAAZhZnT2Q-MBI-THREADED:-B4SvBKU64s%%2022-02-07T21:08:47.989135
Email Subject	AAAAZhZnT2Q-MBI-THREADED:-B4SvBKU64s%%2022-02-07T21:08:47.989135
Master Date	2/8/2022
OS Creation Date/Time	
OS Saved Date/Time	
Date Sent	2/8/2022
Time Sent	4:08:00 PM
Date Received	
Time Received	
Email Datetime Received	
Company	Alphabet, Inc.
From	sshank@google.com
To	angelaying@google.com; seenuu@google.com; dharan@google.com; andrewmenendez@google.com; christowm@google.com; kaliberto@google.com; bobbrose@google.com; nicolasbize@google.com; bentoll@google.com; ralfharing@google.com; sshank@google.com; jayhlee@google.com
Bcc	
Cc	
Volume Name	PROD038-006
CSV Confidentiality	CONFIDENTIAL
CSV Drive Collaborators	
CSV Drive Viewers	
CSV Other Beg Bates	
CSV Last Author	
CSV Organization	
CSV Produced In	
CSV Search Values	
CSV Spec No	
CSV_Gmail Thread Level 1	AAAAZhZnT2Q-MBI-THREADED:-B4SvBKU64s%%2022-02-07T21:08:47.989135
CSV DOJ Edoc Properties	Chat;Email
CSV Redacted	N
CSV References	
CSV Folder Label	
CSV Original Path	
CSV Linked AttachmentID	
CSV Linked ParentID	

Message

From: sshank@google.com [sshank@google.com]
Sent: 2/8/2022 4:08:47 PM
To: sshank@google.com; christowm@google.com; ralfharing@google.com; seenuu@google.com; bentoll@google.com; kaliberto@google.com; angelaying@google.com; bobbrose@google.com; jayhlee@google.com; dharan@google.com; andrewmenendez@google.com; nicolasbize@google.com
Subject: AAAAZhZnT2Q-MBI-THREADED:-B4SvBKU64s%%2022-02-07T21:08:47.989135

- **sshank@google.com** 2022-02-08T16:08:47.989Z

30 days seems far too short. records-retention@google.com is the alias to raise this up to.

- **christowm@google.com** 2022-02-08T17:34:21.154Z

30 days is only for 1-1 conversations with history on. It is 18 months for group conversations with history on or for spaces.

- **christowm@google.com** 2022-02-08T17:34:47.135Z

When you say 30 days is too short. Why is that too short for 1-1's?

- **ralfharing@google.com** 2022-02-08T17:40:52.936Z

because chat is not ephemeral

- **ralfharing@google.com** 2022-02-08T17:41:08.612Z


it remains potentially useful forever

- **seenuu@google.com** 2022-02-08T17:48:46.442Z

+100 to this. At every one of my previous jobs, it's been the case that people (including myself) have searched / gone back multiple months in 1-1 chat histories in order to find key aspects of prior discussions and conversations. In many cases, the 1-1 chat history is the only summary of something that was discussed in a brief face-to-face conversation (hallways / lunch tables / video chat etc.).

As an example: At PayPal (my previous company), all chat history was preserved for 3 years.

- **bentoll@google.com** 2022-02-08T17:50:53.389Z

Chat probably isn't the best way to archive important information for reference later ☐ 

- **kaliberto@google.com** 2022-02-08T17:51:27.854Z

it's a risk management issue.

- **kaliberto@google.com** 2022-02-08T17:52:19.691Z

One on one chats are more likely to be taken out content, especially as some records age out in other systems. The communication patterns tend to be more hyperbolic and disciplined.

- **Updated on** 2022-02-08T17:52:32.435Z

One on one chats are more likely to be taken out content, especially as some records age out in other systems. The communication patterns tend to be more hyperbolic and undisciplined.

- **seenuu@google.com** 2022-02-08T17:52:29.142Z

funnily enough, that's exactly why PayPal preserved it for 3 years - philosophy was "if you're communicating using a company tool, assume it's legally discoverable"

- **christowm@google.com** 2022-02-08T17:52:55.426Z

every company has a different philosophy on retention and appetite for risk

- **angelaying@google.com** 2022-02-08T17:54:14.152Z

just curious, what kind of information is most useful in your 1:1s? ie is it shared docs, or back and forth discussions, or something else?

- **sshank@google.com** 2022-02-08T17:55:07.537Z

Understood, though I wish we (Google) had a bigger appetite. I know that I can store important information elsewhere, but I don't always know what is important at the time and I don't want to spend time looking when a solution exists. I've worked in larger organizations that managed this risk. From what I understand, I see this as a detriment to productivity.

- **sshank@google.com** 2022-02-08T17:55:29.162Z

and why 30 days? Why not 60, 90? What is important about 30?

- **kaliberto@google.com** 2022-02-08T17:55:45.766Z

Records retention patterns should be part of curated collaboration culture. So neither allowing it to run wild or to bulldoze it.

- **bobbrose@google.com** 2022-02-08T17:58:56.861Z

2 thoughts -1) We should make it more obvious to the user, eg, where it says "HISTORY IS ON", could add "Messages saved for 30 days" so people know it's not permanent. 2) Offer a way to save chats. Copy/paste into a doc is tedious, difficult to format, and also not obvious to the user. An "export chat to..." (PDF, Google Doc, etc) and the user can select a date range or "all". This makes it clear that if you need the chat history, you can save it.

- **christowm@google.com** 2022-02-08T18:00:47.824Z

Steve, I understand your viewpoint. Looking at it from the other side though, the amount of "noise" that would be retained for a long time if there was a longer retention period, would increase the risk for Google (as already mentioned) and increase the cost of eDiscovery by a whole lot (in the millions or more).

- **jayhlee@google.com** 2022-02-08T18:07:54.959Z

30-day retention for google.com 1:1 Chat reminds me of the "Do not iron while wearing this clothing" disclaimers, it got there for a very specific reason ☺

- <http://google.com>

- **sshank@google.com** 2022-02-08T18:09:15.069Z

@Mitch Christow fair point, how do other organizations work around this? The users/tools ability to handle search have made cutting through noise a minor chore for end users, myself included. Are there not ways to solve for this on the backend (I'm not an expert)? I'd be curious to see how we weigh the potential loss in productivity to the cost of management overhead. Further to that, I'm curious how our customers set their retention policies. Expense and costly on the backend perhaps, but what serves end users the most?

- **Updated on**2022-02-08T18:10:49.664Z

@Mitch Christow fair point, how do other organizations work around this? The users/tools ability to handle search have made cutting through noise a minor chore for end users, myself included. Are there not ways to solve for this on the backend (I'm not an expert)? I'd be curious to see how we weigh the potential loss in productivity to the cost of management overhead. Further to that, I'm curious how our customers set their retention policies. Expense and costly on the backend perhaps, but what serves end users the most?

- **ralfharing@google.com** 2022-02-08T18:09:39.667Z

part of this is fighting against a culture google itself promulgated starting with gmail. "never delete anything, archive, archive, archive, then search later"

- **dharan@google.com** 2022-02-08T18:16:47.073Z

[aside re: Gmail - Google promulgated that externally with Gmail, but it is also worth noting that corp Gmail only lasts for 18 months. I don't think this is covered in Noogler training and I think a lot of people are surprised

by it. It can be particularly challenging for promo situations where some of the useful artifacts are emails and there have been more than 18 months between promos.]

- **Updated on 2022-02-08T18:17:23.851Z**

[aside re: Gmail - Google promulgated that externally with Gmail, but it is also worth noting that corp Gmail only lasts for 18 months (unless you explicitly Vault it). I don't think this is covered in Noogler training and I think a lot of people are surprised by it. It can be particularly challenging for promo situations where some of the useful artifacts are emails and there have been more than 18 months between promos.]

- **andrewmenendez@google.com 2022-02-08T18:18:31.430Z**

This was a very frequent discussion w/ Slack customers and the various perspectives in this thread were all represented. One large customer decided to set an aggressive policy (roughly 30 day IIRC) and faced an uproar - and ultimately demanded that the data be restored (at great expense). Subsequently they wanted to build a custom system for flagging messages as "important" such that they would be skipped over by the deletion routines. Funnily enough I think they got this idea from Email labels.

- **Updated on 2022-02-08T18:18:53.787Z**

This was a very frequent discussion w/ Slack customers and the various perspectives in this thread were all represented. One large customer decided to set an aggressive policy (roughly 30 day IIRC) and faced an uproar - and ultimately demanded that the data be restored (at great expense). Subsequently they wanted to build a custom system for flagging messages as "important" such that they would be skipped over by the deletion routines. Funnily enough I think they got this idea from email labels.

- **andrewmenendez@google.com 2022-02-08T18:19:32.245Z**

a labeling system could be an interesting middle ground (like our indef label)

<https://sites.google.com/a/google.com/docsftw/productivity-tips/google-apps/managing-gmail/keeping-your-emails-indefinitely>

- <https://sites.google.com/a/google.com/docsftw/productivity-tips/google-apps/managing-gmail/keeping-your-emails-indefinitely>

- **nicolasbize@google.com 2022-02-08T18:19:41.342Z**

I like @Bob Rose's suggestions on improving the user's understanding of the data retention policies. @Ravi Kanneganti FYI

FWIW we are aiming at providing better transitions/collaboration between apps to suit the various use cases. For example, we already have the ability to forward important chat conversations to gmail, or kickstart/edit docs inline with chat conversations.

- **christowm@google.com 2022-02-08T18:20:59.438Z**

@Steve Shank all good questions. Let me see if I can give adequate answers. First off though a public service disclaimer: "I am not a lawyer and I don't play one on TV. All opinions listed here are mine and mine alone and do not represent legal advice." I think the lawyers would want me to say this. 😊

Now we have a range of customer attitudes towards 1-1 retention. From "though shalt never keep history for 1:1 as it is ephemeral and users have a right to privacy." (mostly European companies that have a higher focus on individual user privacy - even in corp settings) all the way to "We need to keep all the records for eternity as we won't know if people will say something important and smart in a 1:1. (mostly public sector customers).

In terms of choosing another mechanism to retain information, besides using a straight up date range, that can become very tricky.

1. Let's say you keep history on for everyone, but allow for users to delete content themselves that they do not deem important, relevant, or worthy of keeping. That puts the burden of curation on the individual users, and as you can imagine is very inconsistent. Even the most diligent content curator will tire of doing this after a few months.

2. If you create some other mechanism of deletion - let's say by looking for keywords in the content or by

autotagging stuff, you may run into questions on the selection criteria in a case. "why did you decide to use criteria x to delete data rather than criteria y" and so it may look arbitrary at best and like you were trying to hide something from the courts at worst.

Using a date range is essentially the most impartial way that people have found without the disposition of data looking like you are destroying evidence.

- **christowm@google.com** 2022-02-08T18:23:30.385Z

@Ramesh Dharan the gmail retention policy is mentioned during orientation and Nooglers are apprised of its existence. Furthermore 18 months only applies to emails that you have actually opened. Unread emails are dispositioned after 6 months. Drafts are deleted after 30 days.

https://support.google.com/info-gov/answer/7050488?hl=en&ref_topic=10252791

- https://support.google.com/info-gov/answer/7050488?hl=en&ref_topic=10252791

- **christowm@google.com** 2022-02-08T18:24:51.208Z

Also, Google has rolled out a new retention policy for Meet video recordings of 90 day retention.

https://support.google.com/info-gov/answer/10583889?hl=en&ref_topic=10252791

- https://support.google.com/info-gov/answer/10583889?hl=en&ref_topic=10252791

- **kaliberto@google.com** 2022-02-08T18:28:37.920Z

Also, as soon as you put *any* capability in place to retain content at the user's discretion...someone will abuse it. So not only do have to worry about the policy being inconsistent, you also have to worry about that one jerk who is using a greasemonkey script to keep any of their crap from being deleted.

- **christowm@google.com** 2022-02-08T18:29:26.351Z

Very colorful

- **andrewmenendez@google.com** 2022-02-08T18:29:52.203Z

☐ I wonder if digital hoarding is in the DSM-5

- **Deleted on** 2022-02-08T18:30:24.528Z

☐ I wonder if digital hoarding is in the DSM-5

- **kaliberto@google.com** 2022-02-08T18:34:52.615Z

It's a shame because we're so good at sentiment analysis and knowledge graphing. We could probably do some really cool stuff to reduce risk around retaining data.

- **christowm@google.com** 2022-02-08T18:37:18.590Z

Shameless plug: I am going to give a PM talk about Google Vault and info gov and eDiscovery during the week of Feb 21. If people are interested, I'd love to have an audience larger than 2 for the PM talk. I'll post the invite here once it is scheduled.

EXHIBIT 29

Message

From: [REDACTED]
Sent: 3/3/2020 4:32:40 PM
To: [REDACTED]
Subject: AAAAp7ODYgY-9Ew-eP8uiec

- [REDACTED] 2020-03-03T16:32:40.586Z

ok team false start - by the IRC semantics of chat Rooms, History remains ON - so I'm going to kill this room and re-create as a group chat with History OFF. sorry about that

EXHIBIT 30

51572
Metadata

Begin Bates	GOOG-AT-MDL-018447102
End Bates	GOOG-AT-MDL-018447102
Custodian	[REDACTED]
File Name	
Extension	eml
Author	[REDACTED]
Subject	AAAAAdjPiD9I-VBBglpLYdt0
Email Subject	AAAAAdjPiD9I-VBBglpLYdt0
Master Date	7/15/2020
OS Creation Date/Time	
OS Saved Date/Time	
Date Sent	7/15/2020
Time Sent	12:13:00 AM
Date Received	
Time Received	
Email Datetime Received	
Company	Alphabet, Inc.
From	[REDACTED]
To	[REDACTED]
Bcc	
Cc	
Volume Name	PROD082
CSV Confidentiality	HIGHLY CONFIDENTIAL
CSV Drive Collaborators	
CSV Drive Viewers	
CSV Other Beg Bates	
CSV Last Author	
CSV Organization	
CSV Produced In	
CSV Search Values	
CSV Spec No	
CSV_Gmail Thread Level 1	AAAAAdjPiD9I-VBBglpLYdt0
CSV DOJ Edoc Properties	Chat;Email
CSV Redacted	
CSV References	
CSV Folder Label	
CSV Original Path	
CSV Linked AttachmentID	
CSV Linked ParentID	

Message

From: [REDACTED]
Sent: 7/15/2020 12:13:24 AM
To: [REDACTED]
Subject: AAAAdjPiD9I-VBBglpLYdt0

- [REDACTED] 2020-07-15T00:13:24.411Z

I think we should turn history off on this chat - would others agree? I'm not sure who owns it.

EXHIBIT 31

51575
Metadata

Begin Bates	GOOG-AT-MDL-008023410
End Bates	GOOG-AT-MDL-008023410
Custodian	[REDACTED]
File Name	
Extension	eml
Author	[REDACTED]
Subject	AAAAtQihJOs-MBI-THREADED:N84nbynN8DA%%2022-08-10T23:19:39.224671
Email Subject	AAAAtQihJOs-MBI-THREADED:N84nbynN8DA%%2022-08-10T23:19:39.224671
Master Date	8/11/2022
OS Creation Date/Time	
OS Saved Date/Time	
Date Sent	8/11/2022
Time Sent	6:19:00 PM
Date Received	
Time Received	
Email Datetime Received	
Company	Alphabet, Inc.
From	[REDACTED]
To	[REDACTED]
Bcc	
Cc	
Volume Name	PROD038-006
CSV Confidentiality	CONFIDENTIAL
CSV Drive Collaborators	
CSV Drive Viewers	
CSV Other Beg Bates	
CSV Last Author	
CSV Organization	
CSV Produced In	
CSV Search Values	
CSV Spec No	
CSV_Gmail Thread Level 1	AAAAtQihJOs-MBI-THREADED:N84nbynN8DA%%2022-08-10T23:19:39.224671
CSV DOJ Edoc Properties	Chat;Email
CSV Redacted	N
CSV References	
CSV Folder Label	
CSV Original Path	
CSV Linked AttachmentID	
CSV Linked ParentID	

Message

From: [REDACTED]
Sent: 8/11/2022 6:19:39 PM
To: [REDACTED]
Subject: AAAAtQihJOs-MBI-THREADED:N84nbynN8DA%%2022-08-10T23:19:39.224671

- [REDACTED] 2022-08-11T18:19:39.224Z

Pro tip: join this Google Group and your chat history defaults to on:

<https://groups.google.com/a/google.com/g/chat-history-default-on> (it still gets deleted, just after a longer period of time than 24h)

- <https://groups.google.com/a/google.com/g/chat-history-default-on>

- [REDACTED] 2022-08-11T19:10:59.425Z

What is the chat history retention policy and is there a way to make it "forever"?

- [REDACTED] 2022-08-11T19:30:16.882Z

<https://support.google.com/info-gov/answer/9366391>

History "on" means 30 days for 1:1 chats, and 18mo for group chats. The 30-day thing has bit me a few times unfortunately.

- <https://support.google.com/info-gov/answer/9366391>

- [REDACTED] 2022-08-11T19:31:10.693Z

* [REDACTED] * (_2022-08-11 15:10:59, UTC-04:00_):

...

What is the chat history retention policy and is there a way to make it "forever"?

...

probably not a great idea for a public company unless you want to end up getting deposed alot

- [REDACTED] 2022-08-11T19:32:01.032Z

- <https://c.tenor.com/ZZjvrAYKwkMAAAAC/deposition-suits.gif>

- [REDACTED] 2022-08-11T20:03:33.867Z

True true...

Thx [REDACTED].

30 days is too soon for the 1-on-1 chat links/history but I've got in the habit of stashing the reference links off... part of the Noogler experience 😊 (having to ask -again- for that link someone shared a long time ago)

EXHIBIT 32

Message

From: [REDACTED]
Sent: 2/15/2023 7:19:19 PM
To: [REDACTED]; glevitte@google.com
Subject: 9dDhgAAAAE-MBI-FLAT:2023-02-15T00:19:19.915439

[REDACTED] February 15, 2023 at 7:19:19 PM UTC

Just did a quick (but more thorough) spot check: ~ [REDACTED]
[REDACTED]

[REDACTED] February 15, 2023 at 7:19:27 PM UTC

huh this legal hold is new 😊

glevitte@google.com February 15, 2023 at 7:23:05 PM UTC

re hold - you mean the chat history? yep, new world

[REDACTED] February 15, 2023 at 7:23:37 PM UTC

Yup, it forced me to resend my message with history on

glevitte@google.com February 15, 2023 at 7:23:45 PM UTC

ah, so you're on the list too

glevitte@google.com February 15, 2023 at 7:24:06 PM UTC

seems to be anyone who's touching stuff with competition risk, including most of the leads

glevitte@google.com February 15, 2023 at 7:24:20 PM UTC

I assume you got an email about it?

[REDACTED] February 15, 2023 at 7:26:25 PM UTC

ah no sorry - I think it's just because I pinged you (there's a fun little speech bubble next to your name:

<https://screenshot.googleplex.com/9umKrGyivDYeYtH>)

<https://screenshot.googleplex.com/9umKrGyivDYeYtH>

glevitte@google.com February 15, 2023 at 7:27:53 PM UTC

ah, yeah I added that manually so folks would know

glevitte@google.com February 15, 2023 at 7:28:22 PM UTC

but [REDACTED] and I think several others have the same thing (albeit they probably haven't added the disclosure)

glevitte@google.com February 15, 2023 at 7:29:05 PM UTC

sounds like you aren't on the list yet

[REDACTED] February 16, 2023 at 4:24:11 PM UTC

QQ - do you know if anything ever happened with [REDACTED]
[REDACTED]

glevitte@google.com February 16, 2023 at 5:04:53 PM UTC

I don't think this ever materialized

glevitte@google.com February 16, 2023 at 5:05:28 PM UTC

[REDACTED] would probably know better than me if they think this is still a good idea

EXHIBIT 33

Source	Privilege Log Number	Date	All Custodians	Email From/Author	Email To	Email CC	Privilege Description	Privilege Status	Privilege Asserted
Volume 40	GGPL-1181786885	12/31/2006 6:04:00 PM	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	Email containing legal advice of [REDACTED] ESQ regarding the right metrics for Google's paid clicks and Ads displayed.	WH	AC

EXHIBIT 34

Source	Privilege Log Number	Date	All Custodians	Email From/Author	Email To	Email CC	Privilege Description	Privilege Status	Privilege Asserted
Volume 40	GGPL-1072078039	4/13/2007 8:30:00 PM					Draft memorandum containing and revealing legal advice of ██████████ ESQ regarding guidance for communication with customers and partners in	WH	AC

EXHIBIT 35

From:

To:

Subject: DoubleClick Media Clips 8.6.07

Sent: Mon, 6 Aug 2007 08:37:30 -0600

[DoubleClick Coverage Report 8.6.07.doc](#)

Good morning,

Leading the news today is a *Los Angeles Times* article on antitrust issues surrounding the Google/DoubleClick deal. The article points out that competitors and public interest groups, led by Microsoft, complained to federal officials that Google was on the verge of amassing too much power over Internet advertising and the trove of personal information that comes with it. The article provided background to the regulatory investigations by the FTC, European Commission and US Congressional hearings. In addition, the article cites recent industry mergers, references Google's policy counsel Pablo Chavez, Precursor's Scott Cleland and several congressional representatives who have commented on the deal.

Deal Book, a *New York Times* blog, covered the *Los Angeles Times* article and noted that opponents view the antitrust battle over the deal as a last-ditch effort to keep Google from achieving total dominance. The entry also included a quote by industry analyst Blair Levin who told the newspaper that competitors such as Microsoft are trying to take advantage of the lobbying edge they have over Google in Washington, where the search giant is viewed as a relative newcomer. "This is the first time where government actually holds the key to Google moving forward," Mr. Levin told The Times.

DM News and several blog postings included coverage of the Canadian Internet Policy & Public Interest Clinic (CIPPIC) application for an inquiry into the proposed Google/DoubleClick deal. One blog entry notes that it seems Google's \$3.1 Billion controversy is another chapter in the PR battle over anti-trust and privacy issues. Precursor analyst Scott Cleland who recently developed a whitepaper on why the FTC will block the acquisition notes that the CIPPIC's filing raises similar concerns as the FTC and EC – evidence of momentum in the growing concern over the Google/DoubleClick deal. He writes, "I've done a lot of work on the facts surrounding this merger case and am very confident that the more authorities learn about the facts of the case – the more concerned and troubled they will get about the profound and broad implications this merger portends for the future of the Internet business model for accessing content."

Lastly, the *New York Times* featured an article on Digitas chairman and chief executive David W. Kenny, profiling his method to reshaping the digital advertising strategy for the company. The article notes that the Publicis' digital plan can be viewed as a reaction to the changes in how consumers live and how it's a response to competition among Google, Yahoo and Microsoft. The article also cites that Publicis is trying to carve out a niche as a middleman between those online giants and the consumer brand companies that buy advertising.

Attached is a full coverage report for your review.

Best,

[REDACTED]
Account Executive
Ogilvy Public Relations Worldwide
WorldWide Plaza
825 Eighth Avenue
New York, NY 10019
Direct: 212-880-5230
Fax: 212-880-2881
[REDACTED]

EXHIBIT 36

Source	Privilege Log Number	Date	All Custodians	Email From/Author	Email To	Email CC	Privilege Description	ESQ	Privilege Status	Privilege Asserted
Volume 37	GGPL-1131888843	12/20/2007 9:01:00 PM					Presentation containing legal advice of regarding major acquisition of ad tech company and		WH	AC

EXHIBIT 37

Message

From: [REDACTED]
Sent: 2/19/2009 5:39:16 PM
To: Brad Bender [bradbender@google.com]
Subject: Re: [Mohan-Staff] Article: Obama's antitrust chief

If the government comes down on Google for being successful I will leave the country and re-read my collection of Ayn Rand books.

[REDACTED]
[REDACTED]
Group Product Manager, Advertiser Products
[REDACTED]
[REDACTED]

On Thu, Feb 19, 2009 at 11:45 AM, Brad Bender <bradbender@google.com> wrote:

It looks like Obama's pick for antitrust chief, Christine Varney, has an issue with Google. She knows DoubleClick very well - she used to represent us in some matters as external Legal counsel.

Antitrust Pick Varney Saw Google as Next Microsoft

[Email](#) | [Print](#) | [A A A](#)

By James Rowley

Feb. 17 (Bloomberg) -- Christine A. Varney, nominated by President Barack Obama to be the U.S.'s next antitrust chief, has described Google Inc. as a monopolist that will dominate online computing services the way Microsoft Corp. ruled software.

"For me, Microsoft is so last century. They are not the problem," Varney said at a June 19 panel discussion sponsored by the American Antitrust Institute. The U.S. economy will "continually see a problem -- potentially with Google" because it already "has acquired a monopoly in Internet online advertising," she said.

While the remarks were made months before Obama picked her to head the Justice Department's antitrust division, the comments signal her approach to the job if confirmed by the Senate. The Microsoft case, brought in 1998 by the Clinton administration, could have led to the breakup of the software giant and was a landmark in antitrust law.

In her remarks at the American Antitrust Institute, Varney advocated aggressive enforcement of antitrust laws to curb the conduct of individual companies that dominate an industry. She didn't return a reporter's telephone call seeking comment today.

White House spokesman Ben LaBolt said that Obama nominated Varney "to vigorously enforce the law" and "is confident that she can do so in a fact-specific and evenhanded way with every matter she will face."

Lobbying for Netscape

Varney, 53, lobbied the Clinton administration on behalf of Netscape Communications Corp. to urge antitrust enforcers to sue Microsoft. She had previously been a member of the Federal Trade Commission under the administration of President Bill Clinton where she became an advocate of online privacy.

Her comments on Google last year combined praise for the company along with her warnings. The Mountain View, California-based company, owner of the world's most popular search engine, is a "spectacular" innovator that became the dominant online advertiser through "terrific work," Varney said.

She also said Google had "lawfully" obtained its monopoly.

Still, Google is "quickly gathering market power in what I would call an online computing environment in the clouds," she said, using a software industry term for software that is based on the Internet rather than in individual personal computers.

"When all our enterprises move to computing in the clouds and there is a single firm that is offering a comprehensive solution," Varney said, "you are going to see the same repeat of Microsoft."

Google 'Discriminating'

As in the Microsoft case, "there will be companies that will begin to allege that Google is discriminating" against them by "not allowing their products to interoperate with Google's products," Varney said.

Google spokesman Adam Kovacevich said in an e-mail response the company has stiff competition that "is literally one click away" on the Internet. Nothing prevents unhappy customers "from switching to another search engine," he said. "Cloud computing is really in its infancy," he said. "There's going to be rich competition in that space for a long time to come."

A survey by ClickStream Technologies last year said Google Docs, a Web-based application, is only used by 1 percent of Internet users.

Research Report

A May 2008 research report by Merrill Lynch & Co. said Google and Salesforce.com are "leveraged to benefit from cloud computing because their core service delivery is based on the Internet." They were among 10 companies, including Amazon.com, Sun Microsystems Inc. and Microsoft, that were positioned to capitalize on the shift to Internet-based software. Still, Google's "revenues from these services are currently less than 1 percent of total revenues," the report said.

Varney said last June she was "deeply troubled" by Google's acquisition of DoubleClick Inc., a maker of software for online advertising, and its proposed advertising alliance with Yahoo! Inc.

The DoubleClick purchase was cleared by the Federal Trade Commission in 2007. In November, the Justice Department blocked Google's proposal to share online advertising with Yahoo by threatening to file a lawsuit challenging the joint venture. Google and Yahoo canceled the deal.

In its statement about the proposed alliance, the Justice Department described Google as "by far the largest provider" of advertising based on Internet searches and syndication of such search ads.

Market Share

The government said Google had a market share of more than 70 percent of both markets. Together, Yahoo and Google would have controlled 90 percent of the Internet search-ad market and 95 percent of the market for search syndication deals.

Varney had invited outside groups like the American Antitrust Institute to help the next administration find ways to enforce the anti-monopolization provision of the Sherman Antitrust Act, known as Section 2, "in a meaningful way in the coming decade given the way the economy is going."

"Telling a liberal Democrat to go out and enforce Section 2 is a little bit like telling a Catholic 'do not sin.' Yeah, we want to do that," she said.

Because the Bush administration Justice Department hadn't brought any anti-monopolization cases, it has ceded the field to European authorities, she said. The European Commission has continued to bring complaints about Microsoft's business practices and investigated Intel Corp. before the FTC began its own inquiry last year.

Global Competition

U.S. companies would be hurt "if we don't have influence on the development" of global competition policy toward "dominant- firm behavior" because "the Europeans are even much more extreme than I would be," she said.

Varney described her role representing Netscape as helping "create the political climate" for the government to sue Microsoft.

"When we went after Microsoft," the company wasn't "viewed in any way as a drag on innovation" and it was "very, very difficult to get consensus to get the government" to bring a case, she said.

In the Microsoft case, the Justice Department accused the company of illegally defending its operating software market by thwarting distribution of Netscape's rival Navigator Web browser.

An appeals court upheld findings that Microsoft had abused its monopoly and set aside a judge's order to break up the company.

The Bush administration negotiated a settlement in 2001 that required Microsoft to give computer makers freedom to promote products that competed with Microsoft's software offerings, such as Internet Explorer and Windows Media Player.

Google fell \$15.02, or 4.2 percent, to close at \$342.66 in Nasdaq Stock Market trading.

To contact the reporter on this story: [James Rowley](mailto:jarowley@bloomberg.net) at jarowley@bloomberg.net

Last Updated: February 17, 2009 18:22 EST

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Brad Bender | Product Management Director | Google Inc. | 212.381.5430
PLEASE NOTE MY NEW EMAIL ADDRESS: bradbender@google.com

~~~~~  
You received this message because you are subscribed to the Google Groups "Mohan-Staff" group.

To post to this group, send email to [mohan-staff@google.com](mailto:mohan-staff@google.com)

To unsubscribe from this group, send email to [mohan-staff+unsubscribe@google.com](mailto:mohan-staff+unsubscribe@google.com)

For more options, visit this group at <http://groups.google.com/a/google.com/group/mohan-staff?hl=en>  
~~~~~

EXHIBIT 38

Message

From: [REDACTED]
Sent: 11/8/2009 8:09:45 PM
To: [REDACTED]; Kent Walker [kwalker@google.com]; [REDACTED]
Subject: Fwd: Attorney-client privileged -- RE: AdMod Announcement Plan

I wanted to forward this thread to make sure we are all on the same page for what will happen between sign and close. Happy to answer any questions as well.

[REDACTED]

----- Forwarded message -----

From: [REDACTED]
Date: Sun, Nov 8, 2009 at 11:39 AM
Subject: Re: Attorney-client privileged -- RE: AdMod Announcement Plan
To: [REDACTED]
Cc: [REDACTED]

REDACTED - PRIVILEGE

[REDACTED]

On Sun, Nov 8, 2009 at 10:13 AM, [REDACTED] wrote:

[REDACTED], I'd guess the most conservative thing we can do is simply start sending catered lunch. This would also be the most fun for them (unless they have that already). Let me know your advice and we can start from there. Thanks!

From: [REDACTED]
Sent: Sunday, November 08, 2009 10:10 AM
To: [REDACTED]
Subject: Re: AdMod Announcement Plan

ATTORNEY CLIENT PRIVILEGED

+ [REDACTED]

[REDACTED] can you advise us here?

[REDACTED], how did you handle this on DoubleClick? Day 1 needs to be defined properly. Feel free to send whomever you think is right on Monday. I think it would be good to have people there who really know how this works in situations DoubleClick situations; that is where there is ambiguity on the degree to which we can work together. I don't fully understand the issues myself even though I have spent a lot of time talking to [REDACTED]. The mechanics of avoiding gun jumping is pretty nuanced.

[REDACTED]
On Sun, Nov 8, 2009 at 10:02 AM, [REDACTED] wrote:
-others

[REDACTED], who can I tell on the HR/facilities side to get that part of this going (e.g., start getting free lunch delivered to their offices on day 1, employee orientations, 1:1s with key people on how google comp works, etc.)? I'd suggest [REDACTED] and [REDACTED] (for the food). I'd also be happy to send an HR person (eg, [REDACTED] or comparable) to their office for day 1 to help with standard questions, etc. Let me know what's most helpful.

From: [REDACTED]
Sent: Sunday, November 08, 2009 9:55 AM
To: Eric Schmidt
Cc: [REDACTED] Kent Walker; [REDACTED]
Subject: Re: AdMod Announcement Plan

[REDACTED]
On Sun, Nov 8, 2009 at 8:59 AM, Eric Schmidt <eschmidt@gmail.com> wrote:

Please proceed with the timing without regard to Apple; they already know.. thanks

Also I think we should have an employee meeting there on Monday; for me the best time is 10am Monday morning for 30 minutes but other times might work

please send me [REDACTED] contact info if anyone has it

Thanks !

Eric

On Nov 8, 2009, at 8:03 AM, [REDACTED] wrote:

PLEASE DO NOT FORWARD

Folks

Here is our Admob announcement plan. If you have any comments do please let me know—all feedback gratefully received.

We will announce the deal at approximately 9:15am PST tomorrow (i.e. Monday 9 November). We need to inform AdMob's employees first, and are also keen to get hold of Steve Jobs before the announcement goes live so the exact timing may change a little in the next 24 hours. NB. We have no obligation either to announce the deal or the amount we are paying but (a) it is good news and (b) if we don't it (the deal itself and the price) will leak. Transparency is the best way forward.

Communications Plan

External: We will issue a press release and post to the Official Google Blog. Susan W, Vic G and Omar (AdMob's Founder) will then talk to the main Valley press from AdMob's offices in San Mateo directly afterwards. This will be done one to one by phone. David Lawee will handle the remaining press as needed in the afternoon.

Internal: Susan will send an email to all Googlers linking to a MOMA story—this will go live at the same time as the press release.

Third Party Outreach

If Google were not Google this announcement would be relatively straight forward. A number of other companies have made similar deals in the last few years. For example:

- In May 2007, AOL acquired Third Screen Media, which it operates today as a mobile ad subsidiary of its Advertising.com network.
- In May 2007, Microsoft acquired ScreenTonic, a French mobile ad firm that provides mobile ad solutions for advertisers and publishers.
- In August 2007, Yahoo acquired Actionality, a company that inserts ads in content for mobile devices, such as mobile phone games.

However we are (thankfully) Google and so it may attract quite a bit of scrutiny. So we also have a detailed plan to notify key audiences--advertisers, publishers, mobile partners (both ours and AdMob's), ad trade associations, policymakers, commentators and investors--so that we can put our best foot forward right at the time we announce. The need to be proactive in our outreach was a key lesson we learned from the DoubleClick acquisition and also the failed Yahoo! Deal.

You can see the main arguments we will be making here at our AdMob acquisition micro-site (Please not the privacy arguments are not right yet).

Finally as an FYI, we will be briefing the leading ad trade associations (whose opposition to the Yahoo deal was so critical), seven of our key mobile publisher/developer partners who we hope will be willing to say positive things publicly after launch and two of the key privacy groups (CDT and EFF) with whom we have NDAs.


Thanks [REDACTED] et al

--




This email may be confidential or privileged. If you received this communication by mistake, please don't forward it to anyone else but please do delete all copies/attachments and let me know that it went to the wrong person. Thanks.

--



Deputy General Counsel
Google Inc.

--



Deputy General Counsel
Google Inc.

EXHIBIT 39

Page 1

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

THE STATE OF TEXAS, et al.,)
)
Plaintiffs,) Case No.
v.) 4:20-cv-00957-SDJ
)
GOOGLE LLC,) Hon. Sean D. Jordan
)
Defendant.)

HIGHLY CONFIDENTIAL
PURSUANT TO PROTECTIVE ORDER

— — —
THURSDAY, MAY 23, 2024
— — —

Videotaped Deposition of [REDACTED]
taken pursuant to notice and conducted at Norton Rose
Fulbright US LLP, 1301 Avenue of the Americas, Room 30-C,
New York, New York, commencing at 9:34 a.m., EDT, on the
above date, before Jennifer A. Dunn, Registered Merit
Reporter, Certified Realtime Reporter, Missouri Certified
Court Reporter, and Certified Shorthand Reporter in
California, Illinois, and Texas #12050.

— — —
GOLKOW, a Veritext Division
877.370.DEPS

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Counsel for Google LLC

ALSO PRESENT:


Jonathan Jaffe, Consultant - It's Your Internet (via Zoom)

RAY MOORE - Trial Technician

CHRIS RITONA - Videographer

I N D E X

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P R O C E E D I N G S

(Thursday, May 23, 2024 at 9:34 a.m. Eastern.)

THE VIDEOGRAPHER: We are now on the record.
My name is Chris Ritona. I'm the videographer with
Golkow Litigation Services.

Today's date is May 23rd, 2024, and the time
is approximately 9:34 a.m. Eastern.

This video deposition is being held in New
York City at Norton Rose Fulbright in the matter of
State of Texas, et al., versus Google, LLC, for the
U.S. District Court, Eastern District of Texas, Sherman
Division, Civil Action No. 4:20-cv-00957-SDJ, and the
deponent today is [REDACTED].

All counsels' appearances will be noted upon
the stenographic record.

The court reporter today is Jennifer Dunn,
and she will now please swear in the witness.

[REDACTED]
of lawful age, having been first duly sworn to tell the
truth, the whole truth and nothing but the truth, deposes
and says on behalf of the Plaintiffs, as follows:

EXAMINATION

BY MS. YOUNG:

Q Good morning, [REDACTED].

A Good morning.

1 Q Can you please state your full name for the jury?

2 A [REDACTED].

3 Q How do you spell [REDACTED]

4 A [REDACTED]

5 Q And you understand that you are testifying today
6 under oath and required to give truthful, accurate testimony
7 today?

8 A Yes.

9 Q Is there anything impairing your ability to give
10 truthful, accurate testimony today?

11 A No.

12 Q Are you represented by a lawyer at this deposition
13 today?

14 A I am not.

15 Q And before today, you and I, we have never met,
16 correct?

17 A I don't recognize you, so.

18 Q Regarding this deposition, did any lawyers
19 representing Google contact you?

20 A No. I think I've only spoken to Melonie from
21 Texas.

22 Q And when you spoke to the counsel from Texas, that
23 was with respect to planning logistics for this deposition?

24 A Meaning, like, with regard to this case?

25 Q That's correct.

1 A Yes.

2 Q You were on the engineering team for AdX and DRX?

3 A Yes.

4 Q At the time you wrote this, as far as you knew,
5 there was no antitrust or deceptive trade practices
6 investigations or lawsuits against Google?

7 A I was aware that there were various
8 investigations. I think when I first joined AdX, there was
9 somebody on-site who had like a little office and they were
10 doing something and people pointed this out to me, and they
11 said: "Leave them alone," and I think somebody also said
12 like: "Don't discuss this near them because we don't want
13 to make things complicated."

14 I don't even remember what this was, I'd have to
15 guess what it was. I don't remember.

16 Q You don't know the subject of that investigation?

17 A No. But it was ongoing. For all I know, it was
18 from Canada, but I think it was like FTC something or other.

19 Q And was that around the 2012 period when you
20 joined Google?

21 A Possibly. 2012, 2013, something like that, yeah.

22 Q And I want to start with paragraph 1 of your
23 document. You write: "When I joined AdX, our mission was
24 to create an open, transparent marketplace to bring together
25 buyers and sellers. Over the past couple of years, it has

EXHIBIT 40

Message

From: Neal Mohan [nmohan@google.com]
Sent: 5/24/2013 8:29:34 PM
To: Susan Wojcicki [susan@google.com]
Subject: Fwd: Press Reports: FTC Investigation & Google Display

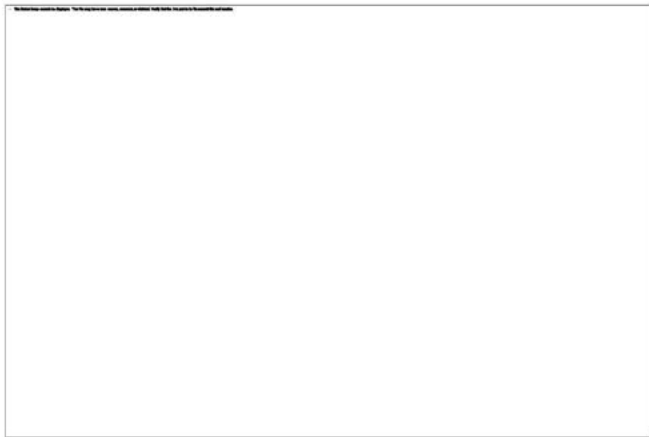
----- Forwarded message -----

From: [REDACTED]
Date: Fri, May 24, 2013 at 1:16 PM
Subject: Re: Press Reports: FTC Investigation & Google Display
To: [REDACTED] Jonathan Bellack <jbellack@google.com>, [REDACTED]
Cc: Neal Mohan <nmohan@google.com>, [REDACTED]

One more -- this is an interesting read on this from Rob Hof @ Forbes, who of course knows our platforms story very, very well (and calls out Think DoubleClick). Also interesting to see Mediaocean speaking up on our behalf.

Why Google's Display Ad Business Drew An FTC Antitrust Probe



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Follow Comments



Just a few months after escaping an antitrust case on its search ads, Google GOOG -1.29% is now the subject of a Federal Trade Commission probe of its display-ad business.

This comes as little surprise to anyone who has been watching the search advertising giant's quiet but steady rise in the past few years in the business of placing banner and video ads on websites. But it's also no sure thing that this probe will go any further than the last one.

According to multiple reports starting with Bloomberg's last night, the FTC is looking at whether Google is using the dominance of its DoubleClick service that helps advertisers and publishers run display ads to force them to use its other display-ad services, such as its advertising exchange.

 Google Makes Renewed Grab for the Rest of Online Advertising  Robert
HofContributor

 FTC Lets Google Off The Hook In Search Competition Case  Robert
HofContributor

 The FTC Smartly Ends Its Imprudent Google Search Antitrust
Investigation  Eric GoldmanContributor

 Here's The Future of Advertising, According To Google  Robert HofContributor

It's not clear yet whether the preliminary look will result in anything more. The FTC and the Justice Department don't investigate behemoths like Google on a lark, so there's at least a decent chance they'll find reason to look deeper. But according to several online ad sources, the evidence is mixed, and some—even at least one competitor—say Google is playing fair with its so-called “stack” of ad technologies. Contacted for comment, Google provided only a terse statement: “We have not heard anything from the FTC regarding any new antitrust investigation.”

So why the probe now? Google leads in display-ad revenues, but not by much, and with Facebook FB -3.47%, Yahoo YHOO +1.07%, Microsoft MSFT -0.15%, and AOL AOL -1.26% all still significant players, Google is far from dominant. However, it has been relentlessly buying up ad tech players, from DoubleClick in 2007 to mobile ad company AdMob in 2009, ad exchange buying firm Invite Media in 2010, publisher ad placing company AdMeld in 2011, and social ad startup Wildfire Interactive last year. In the past year, it has been rewriting its software to make those services work better together.

That may be the crux of the FTC probe. Even if it's demanded by customers, “integration” can easily cross the line over to “anticompetitive” if it becomes too hard for rival services to work with DoubleClick products, Google's ad exchange, or other Google services. That

integration also could make other ad tech companies feel forced to use Google's ad exchange over those from AppNexus, OpenX, or Yahoo's Right Media.

The probe isn't just a sign of Google's growing power in the other half of online advertising it doesn't yet own. It also reflects the consolidation of display advertising dollars to a few very large publishers including Google, Facebook, and even struggling Yahoo. Not least, it's coming amid a tightening of competition among a consolidating group of sizable ad networks and ad technology companies, whose growing power to reach large audiences across the Web increasingly puts them at odds with Google in its dual role as tech provider and publisher.

What precipitated this latest probe, according to the Wall Street Journal, was not publishers, but at least one ad tech rival. It's not clear which rivals, though perennial Google opponent Microsoft is said not to be involved. It's also not clear how widespread these concerns are, even if the FTC clearly believes they're broad enough to warrant at least a look.

For years now, rivals, advertisers and agencies, and publishers all have feared Google's rising power in advertising, most recently in display ads. One digital agency who asked not to be identified said last year that Google has been good at supporting agencies, but that's a double-edged sword. "They make it very easy to buy media using their own technologies, and if you're not using Google technology, it becomes more difficult," this person said. "We love Google as a media company, but we prefer not to work with them as a technology company," instead using its own technologies.

Likewise, an executive at one rival, AppNexus, said there are simmering complaints from advertisers and publishers that Google's ad systems are not as open to outside software providers as they could be. AppNexus President Michael Rubinstein, a longtime former DoubleClick and Google executive, said it's apparent that Google wants to own the entire chain of display-ad tech products.

However, at least one competitor today told me that he believes Google is playing fair. "The reason Google is gaining in scale is that they're executing really well," says Bill Wise, CEO of rival "ad operating system" Mediaocean. "They could force" partners and customers to use their technologies, "but they actually don't."

Wise added that "there's a fine line between leveraging your position, forcing you to use a product, and making it really convenient." Google, he says, "has made it really convenient."

Wise said his company is looking to provide a more open version of an end-to-end ad system that incorporates many other companies' services, in competition with Google. But

he also said Google is a “big part of any solution I create,” and it provides hooks into its system for Mediaocean and others.

That view echoes similar ones I heard last year. Andrew Casale, VP of strategy for ad tech firm Casale Media, told me that even though Google is both partner and competitor, “to Google’s credit, they’re playing nice” by “supporting the ecosystem. They could close off their system and be a walled garden,” but he says they haven’t.

Still, as Google continues to rewrite its ad tech software to work together better—a development it is expected to continue touting at a June 4 annual meeting with DoubleClick customers—by most accounts it’s making life tougher for competitors. But part of Google’s push stems from an awareness that competition is intensifying. Facebook in February bought the Atlas ad server from Microsoft in an apparent attempt to compete with Google more broadly in display. Facebook also opened its own ad exchange last year. Yahoo has been making noises about shoring up its ad system, too, while software firms such as Adobe and Oracle also buy up online ad firms.

Ultimately, antitrust law is supposed to protect consumers, not competitors. Given the mixed picture, the FTC may have a tough job ahead to make yet another case against Google.

On Fri, May 24, 2013 at 8:57 AM, Andrea Faville <afaville@google.com> wrote:
+ Jonathan & Bonita

In case you haven't seen, here is the WSJ's reporting which includes a good bit more detail. Allegations appear to be centered around DFP & Admeld/AdX

FTC Begins Probe of Google's Display-Ad Business

- **Article**
- **Stock Quotes**
- **Comments**

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By AMIR EFRATI

The Federal Trade Commission has begun to examine complaints by rivals of Google Inc. GOOG -0.75% that the Internet giant abused its power in the market for selling online-graphical and video ads, according to people briefed on the matter.

The inquiry comes just months after the agency ended its yearslong antitrust probe of Google's Web-search engine and search-advertising business.

The FTC's examination is in its early stages, these people said, and may not result in a formal probe.

Spokespeople for Google and the FTC declined to comment. Bloomberg News earlier reported on the FTC's interest in Google.

The FTC six years ago said it would monitor Google's behavior in the online-advertising market, where the company generates almost all of its revenue, after it acquired a online-ad company DoubleClick. That business became the foundation for Google's graphical and video ad-brokering services, now a multibillion-dollar business.

Some of Google's advertising-technology rivals have complained to antitrust authorities that Google has allegedly combined several of its ad-related services for website publishers so that the publishers would have to use them all rather than just one Google service, according to people familiar with the matter. That process is known as "tying" or "bundling."

More

- New Display Ad Push Adds to Bag of Tricks
- Google Expected to Surpass Facebook in Display-Ad Sales
- Google Display Chief Makes Pitch to Publishers

There is no evidence that website publishers themselves have complained to regulators.

In the U.S., Google last year generated \$2.26 billion from sales of graphical and video ads, also called "display" ads, or 15.1% of the \$15 billion market, according to research firm eMarketer Inc. Much of the revenue is generated by Google's YouTube video site, which sells display ads.

Google also has built a substantial business from helping advertisers find ad space on millions of websites. Google plays this matchmaking role through its Google DoubleClick Ad Exchange, a kind of automated marketplace that generates fees for the company.

And Google generates fees from helping websites track their automated advertising sales through an "ad serving" system called DoubleClick for Publishers, which is dominant in the industry. Google has special tools to help advertisers buy ads across millions of sites in an automated fashion.

At least one rival has complained to regulators that Google allegedly is prohibiting website publishers who use DoubleClick for Publishers to use non-Google technology to help the publishers manage how they sell their ad space, said a person familiar with the matter. Instead, the rival has claimed, Google has pushed or financially incentivized publishers to use Google's own AdMeld service to manage how they sell ad space to advertisers. In some cases, Google rivals have said the company is waiving fees for some of its services if website publishers decide to use them rather than services provided by those rivals.

The display-ad business, which Google previously said would generate about \$5 billion in gross revenue in 2012, has helped the company shake the notion that it could only make money from selling small text ads that appear next to results on its Web-search engine. Google in recent years surpassed Facebook Inc., FB -0.40% Yahoo Inc. YHOO -2.00% and AOL Inc. AOL +0.86% in generating display ad-related revenue, eMarketer has said.

Since acquiring Doubleclick for \$3.1 billion in 2007, Google has spent more than \$1 billion more on acquisitions of various display-ad and mobile-ad firms.

In deciding not to block Google's DoubleClick acquisition, the FTC in December 2007 said in a public statement that it noted concerns that Google could potentially use DoubleClick's market position to boost Google's other advertising products.

"The markets within the online advertising space continue to quickly evolve, and predicting their future course is not a simple task," the agency said, adding that it "will closely watch these markets and, should Google engage in unlawful tying or other anticompetitive conduct, the Commission intends to act quickly."

On Thu, May 23, 2013 at 5:13 PM, [REDACTED] wrote:
Thanks [REDACTED]. Let us know how we can help.
FYI Neal, [REDACTED]'s reviewed the CAB agenda that's live and is cool with keeping as is for now.

M

On Thu, May 23, 2013 at 1:40 PM, [REDACTED] wrote:
Hi --

You may have started seeing press reports, starting with Bloomberg, that there's an investigation brewing at the FTC into our display practices.

The background: Bloomberg says their anonymous sourcing is "strong," although we haven't heard anything else about this from the FTC or otherwise, and their reporting actually seems pretty thin.

Right now, our broad response is not to comment. Our corp team is telling a few key reporters on background that we have no knowledge. I'll be keeping tabs on the cycle - let me know if you have questions. I'll keep you updated as information comes in.

[REDACTED] Go gle [REDACTED]

[REDACTED] | Marketing | Partners & Display | [REDACTED]

--
[REDACTED] | Go gle | Global Communications & Public Affairs | [REDACTED] |

--
[REDACTED] | Go gle | Global Communications & Public Affairs | [REDACTED] |

--
Neal Mohan | Google | 917-287-7981 | nmohan@google.com

EXHIBIT 41

Message

From: [REDACTED]
Sent: 11/19/2014 4:44:39 AM
To: [REDACTED]
CC: Neal Mohan [nmohan@google.com]; [REDACTED]
Subject: Re: PRIVILEGED - Important / Update on Digiday Story

We should definitely point out that there has been a lot of antitrust noise about our display business in years past (including by competitors and lobby group FairSearch who all briefed the press) and nothing has come of it. This is the latest in their desperate attempts to compete via regulation. It would be good if the article says that there have already been complaints earlier about our display business and they apparently went nowhere. The idea that the lumascape can/should be regulated for not being competitive *enough* is crazy.

On Nov 18, 2014 4:14 PM, [REDACTED] wrote:

Redacted - Privilege

PRIVILEGED

On Tue Nov 18 2014 at 3:35:25 PM Neal Mohan <nmohan@google.com> wrote:
+ [REDACTED]

Redacted - Privilege

[REDACTED], the context here is around our DVIP program and how it applies to our various products (eg, advertisers benefit from using DBM but not one of our competitors).

On Tue, Nov 18, 2014 at 3:00 PM, [REDACTED] wrote:
PRIVILEGED & CONFIDENTIAL

Hey --

Sending to a smaller group. In my follow ups with the Digiday reporter, he shared he has sources (competing ad tech vendors) that are saying they've had meetings with the FTC specifically about us, as recently as this month with future ones scheduled. He's not sharing additional details at this point but wanted this group to be aware.

We can tell him we're unaware of any inquiries.

[REDACTED] Go gle [REDACTED]

--

Neal Mohan | Google | 917-287-7981 | nmohan@google.com

EXHIBIT 42

Source	Privilege Log Number	Date	All Custodians	Email From/Author	Email To	Email CC	Privilege Description	Privilege Status	Privilege Asserted
Volume 37	GGPL-1031862345	7/29/2015 7:26:00 AM	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Email containing legal advice of [REDACTED] ESQ regarding acquisition of DoubleClick and related active litigation.	WH	AC

EXHIBIT 43



Freshfields Bruckhaus Deringer US LLP

HIGHLY CONFIDENTIAL

Via Email

Zeke DeRose III
The Lanier Law Firm, PC
Zeke.DeRose@lanierlawfirm.com

Geraldine Young
Marc B. Collier
Norton Rose Fulbright US LLP
geraldine.young@nortonrosefulbright.com
marc.collier@northrosefulbright.com

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3 World Trade Center
175 Greenwich Street
New York, NY 10007
T +1 212 284 4910
F +1 646 521 5710
E rob.mccallum@freshfields.com
www.freshfields.com

August 29, 2024

Re: *State of Texas et al. v. Google LLC*, No. 4:20-cv-957-SDJ (E.D. Tex.)

Counsel:

We write further to our letter dated July 10, 2024 which set forth, in Appendix A, the dates on which custodians in this action were placed on legal hold. Following a manual review, we recently identified that Appendix A mistakenly did not list in many instances the earliest date on which each custodian received a legal hold.

Appendix A to this letter contains a corrected chart that provides the earliest date on which a legal hold notice related to ad tech was issued to each custodian. For custodians who departed Google before they were placed on hold, Appendix A lists the date on which they were placed on hold.

Sincerely,

/s/ Robert J. McCallum

Robert J. McCallum

Appendix A

Custodian Name	Date Originally Provided	Corrected Date
	February 3, 2021	February 3, 2021
	June 2, 2020	June 2, 2020
	February 3, 2021	February 3, 2021
	January 22, 2021	August 6, 2020
	June 22, 2020	June 23, 2020
	December 5, 2019	December 5, 2019
	January 22, 2021	March 5, 2020
	May 25, 2023	May 25, 2023
	August 4, 2023	August 4, 2023
	January 22, 2021	March 5, 2020
Jonathan Bellack	October 4, 2019	October 4, 2019
Brad Bender	October 4, 2019	October 4, 2019
	January 18, 2023	November 19, 2020
	September 20, 2022	September 20, 2022
	January 22, 2021	December 10, 2019
	January 22, 2021	March 5, 2020
	October 4, 2019	October 4, 2019
	January 22, 2021	December 10, 2019
	February 3, 2021	February 3, 2021
Per Bjorke	January 29, 2020	January 30, 2020
	June 22, 2020	June 23, 2020
	May 25, 2023	May 25, 2023
Alejandro Borgia	September 20, 2023	September 20, 2023
	January 22, 2021	December 10, 2019
	January 22, 2021	December 10, 2019
	March 26, 2024	March 26, 2024
	August 4, 2023	January 30, 2020
	August 4, 2023	August 4, 2023
	February 3, 2021	February 3, 2021

Custodian Name	Date Originally Provided	Corrected Date
	January 22, 2021	March 5, 2020
	February 3, 2021	February 3, 2021
	January 22, 2021	January 30, 2020
	June 22, 2020	June 22, 2020
	June 12, 2023	June 12, 2023
	January 22, 2021	December 10, 2019
Sam Cox	October 4, 2019	October 4, 2019
	February 3, 2021	February 3, 2021
	September 20, 2022	September 20, 2022
	October 16, 2023	February 13, 2020
	January 18, 2023	February 23, 2023
	January 22, 2021	December 10, 2019
	January 22, 2021	December 10, 2019
	January 22, 2021	December 10, 2019
	January 22, 2021	December 10, 2019
	August 4, 2023	August 4, 2023
	August 4, 2023	November 19, 2020
	January 22, 2021	December 10, 2019
	January 22, 2021	January 30, 2020
	August 4, 2023	August 4, 2023
	February 3, 2021	February 3, 2021
	January 22, 2021	June 23, 2020
	January 22, 2021	June 23, 2020
	January 22, 2021	March 5, 2020
	June 22, 2020	June 2, 2020
	July 26, 2023	July 26, 2023
	February 3, 2021	February 3, 2021
	January 22, 2021	June 23, 2020
	January 22, 2021	January 30, 2020
	September 26, 2023	September 25, 2023

Custodian Name	Date Originally Provided	Corrected Date
	January 22, 2021	January 30, 2020
	October 4, 2019	October 4, 2019
	August 6, 2020	August 6, 2020
	January 29, 2021	January 29, 2021
	March 26, 2024	April 4, 2024
	March 26, 2024	April 4, 2024
	January 18, 2023	February 23, 2023
	October 4, 2019	October 4, 2019
	August 4, 2023	November 19, 2020
Nirmal Jayaram	January 22, 2021	June 23, 2020
	June 12, 2023	June 12, 2023
	January 22, 2021	March 5, 2020
	January 22, 2021	March 5, 2020
	February 21, 2020	March 5, 2020
	October 4, 2019	October 4, 2019
	August 4, 2023	August 4, 2023
	January 22, 2021	December 10, 2019
Woojin Kim	January 22, 2021	June 23, 2020
	January 22, 2021	October 4, 2019
	February 3, 2021	February 3, 2021
	May 25, 2023	May 25, 2023
	February 4, 2020	February 4, 2020
Nitish Korula	October 4, 2019	October 4, 2019
	February 10, 2021	February 10, 2021
	June 2, 2020	June 2, 2020
	January 22, 2021	December 10, 2019
	September 25, 2023	September 25, 2023
Chris LaSala	January 22, 2021	October 4, 2019
	January 22, 2021	August 6, 2020
George Levitte	January 22, 2021	June 23, 2020
	January 22, 2021	June 23, 2020

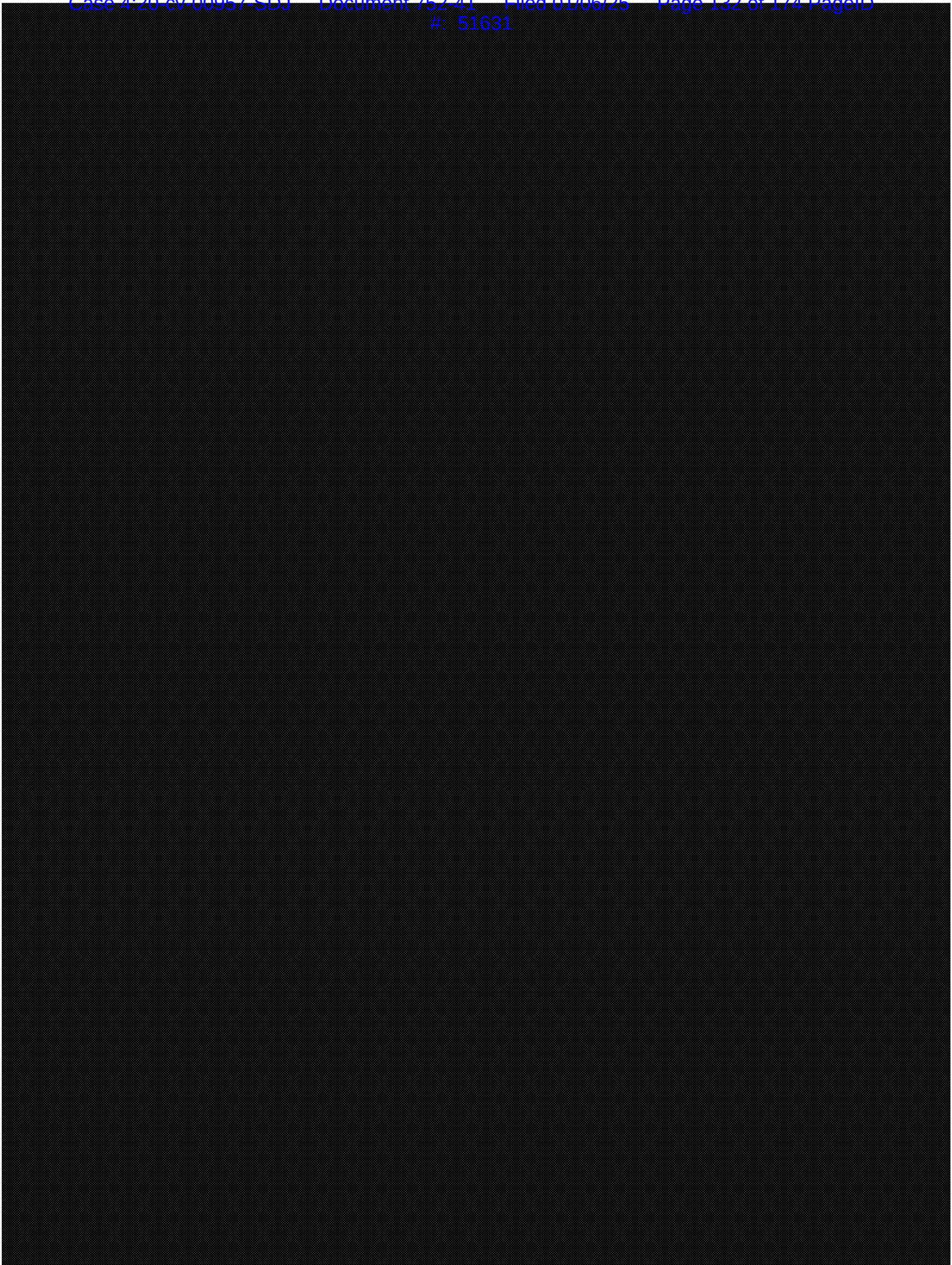
Custodian Name	Date Originally Provided	Corrected Date
Eisar Lipkovitz	June 22, 2020	June 22, 2020
	February 23, 2023	July 12, 2021
	January 22, 2021	June 23, 2020
	August 4, 2023	August 4, 2023
	January 22, 2021	June 23, 2020
	January 22, 2021	March 5, 2020
	July 26, 2023	July 26, 2023
	January 22, 2021	March 5, 2020
	February 3, 2021	February 3, 2021
	May 3, 2023	July 12, 2021
	January 22, 2021	June 23, 2020
Neal Mohan	April 27, 2023	December 10, 2019
Jessica Mok	February 23, 2023	April 28, 2021
	August 4, 2023	August 4, 2023
	January 22, 2021	January 30, 2020
	February 3, 2021	February 3, 2021
	March 8, 2021	March 8, 2021
	February 3, 2021	June 23, 2020
	July 26, 2023	July 26, 2023
	January 22, 2021	June 23, 2020
	June 14, 2023	June 14, 2023
	June 12, 2023	June 12, 2023
	January 22, 2021	June 23, 2020
	July 26, 2023	July 26, 2023
Aparna Pappu	January 22, 2021	October 4, 2019
	September 20, 2022	September 20, 2022
	January 22, 2021	December 10, 2019
	October 16, 2023	October 16, 2023
	January 22, 2021	October 4, 2019
	January 22, 2021	December 20, 2019
	March 26, 2024	April 4, 2024

Custodian Name	Date Originally Provided	Corrected Date
Sundar Pichai	October 4, 2019	October 4, 2019
	January 22, 2021	January 30, 2020
	February 3, 2021	February 3, 2021
	June 22, 2020	June 23, 2020
	October 4, 2019	October 4, 2019
	November 4, 2019	November 4, 2019
	February 3, 2021	February 3, 2021
	January 22, 2021	June 23, 2020
	May 23, 2023	May 23, 2023
	June 12, 2023	April 28, 2021
	January 12, 2022	January 13, 2022
	January 18, 2023	February 23, 2023
	January 22, 2021	January 22, 2021
	January 22, 2021	March 5, 2020
	January 22, 2021	March 5, 2020
	May 25, 2023	November 19, 2020
	August 4, 2023	August 4, 2023
	December 20, 2019	January 30, 2020
	March 8, 2021	March 8, 2021
	January 29, 2021	January 29, 2021
Philipp Schindler	October 4, 2019	October 4, 2019
	October 4, 2019	October 4, 2019
	January 22, 2021	June 23, 2020
	January 22, 2021	July 14, 2020
	January 22, 2021	July 13, 2020
Scott Sheffer	February 3, 2021	December 10, 2019
	January 22, 2021	January 30, 2020
	March 3, 2022	March 3, 2022
	May 23, 2023	May 23, 2023
	January 22, 2021	December 10, 2019
	January 22, 2021	June 23, 2020

Custodian Name	Date Originally Provided	Corrected Date
	January 22, 2021	September 17, 2020
	August 4, 2023	August 4, 2023
	January 22, 2021	March 5, 2020
	August 4, 2023	November 19, 2020
	June 12, 2023	June 12, 2023
Scott Spencer	January 22, 2021	December 10, 2019
	January 22, 2021	March 5, 2020
Rahul Srinivasan	January 22, 2021	October 4, 2019
	January 22, 2021	December 10, 2019
	October 4, 2019	October 4, 2019
	January 22, 2021	January 30, 2020
	January 22, 2021	October 4, 2019
	January 22, 2021	January 30, 2020
	June 12, 2023	June 12, 2023
	February 23, 2021	February 3, 2021
	January 22, 2021	December 10, 2019
	June 14, 2023	June 14, 2023
	February 3, 2021	February 3, 2021
	August 4, 2023	August 4, 2023
	January 22, 2021	October 4, 2019
	June 12, 2023	June 12, 2023
	June 12, 2023	June 12, 2023
	January 22, 2021	March 5, 2020
	January 22, 2021	December 10, 2019
	March 3, 2022	March 3, 2022
	January 22, 2021	December 10, 2019
	January 18, 2023	January 18, 2023
	May 25, 2023	May 25, 2023
	January 22, 2021	December 10, 2019
	February 3, 2021	February 3, 2021
	January 22, 2021	July 14, 2020

Custodian Name	Date Originally Provided	Corrected Date
	January 22, 2021	October 4, 2019
	January 22, 2021	March 5, 2020
	January 22, 2021	January 30, 2020
Susan Wojcicki	October 4, 2019	October 4, 2019
	October 4, 2019	October 4, 2019

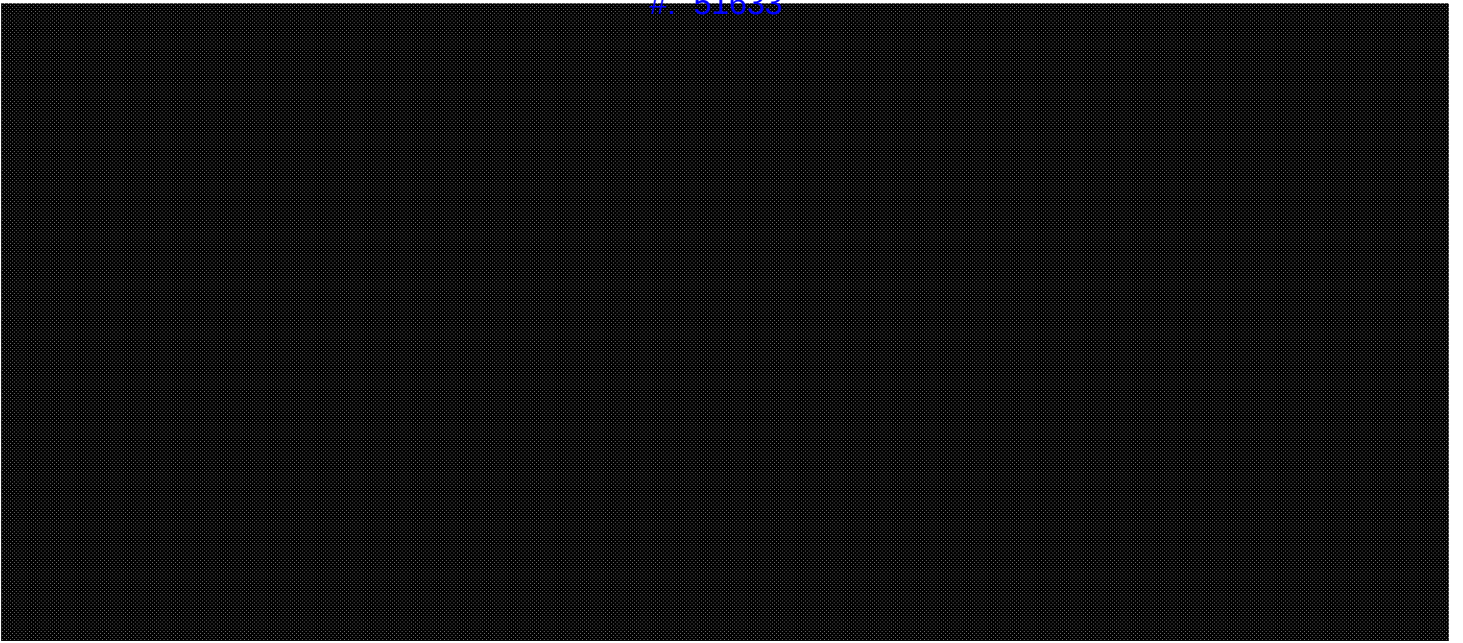
EXHIBIT 44A



Hi --

The U.S. House of Representatives Judiciary Committee, the Department of Justice Antitrust Division, and a coalition of state attorney generals have launched three separate investigations of Google's search and advertising products. In particular, these government bodies are investigating alleged anticompetitive conduct pursuant to their respective authorities.

You have been identified as someone who might have information that is relevant to this matter and you are being placed on "legal hold." This means you must keep (and not delete!) all relevant information as explained below.

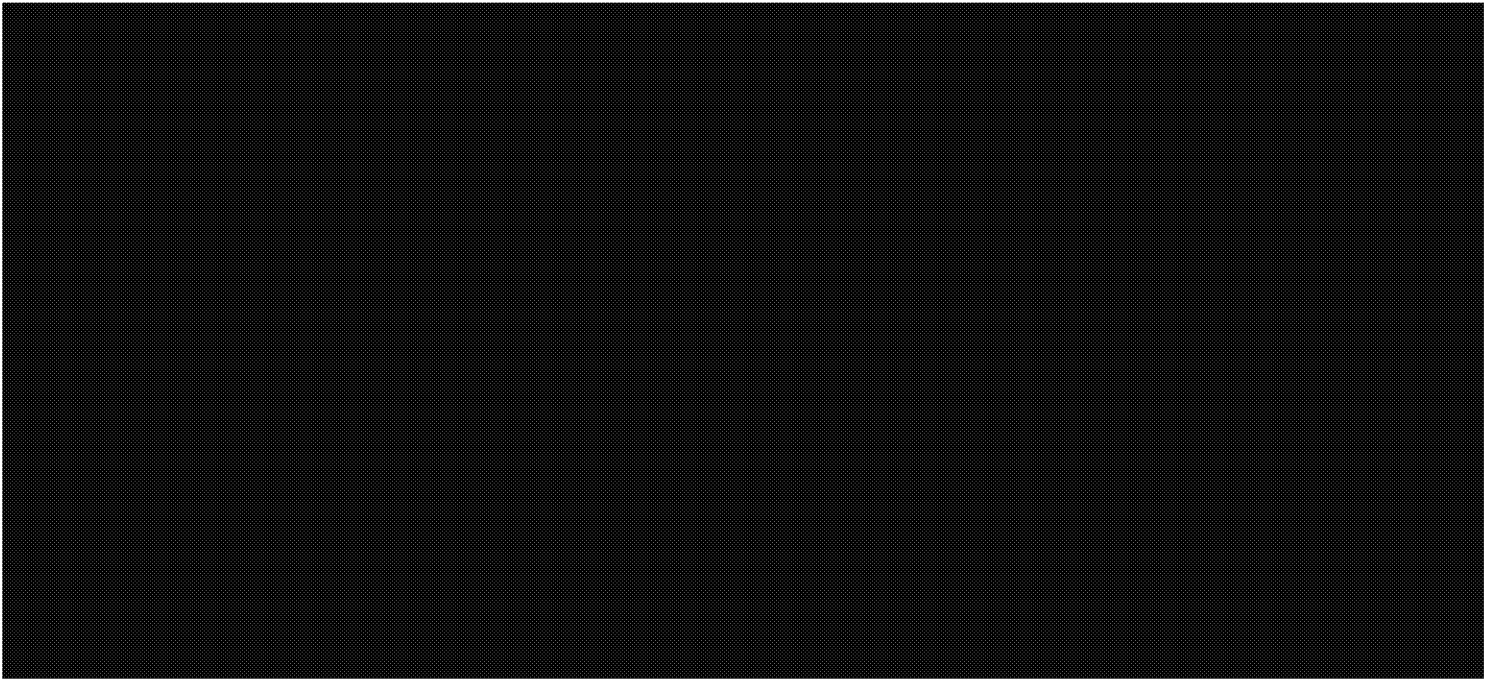


[REDACTED]

[REDACTED]

Please do not use the following tools or messaging apps to discuss any topics covered by this legal hold:

- any third party tools or messaging apps; or
- any Google messaging apps (such as Chat, Hangouts, Duo) or Dogfood apps (if you must do so, please make sure the settings preserve the messages, such as switching to “history on” for Chat or Hangouts)



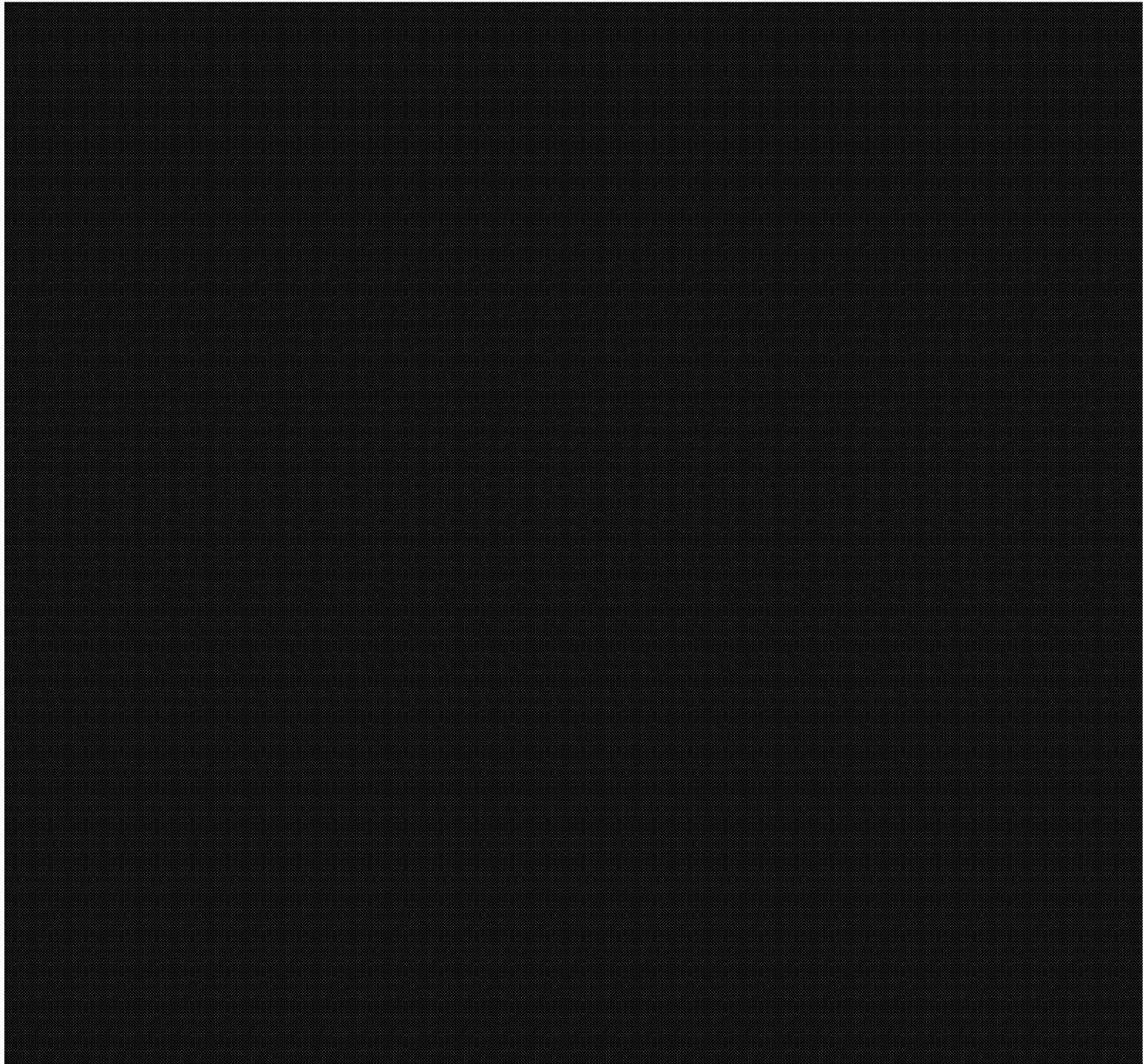
SLIPSHEET

EXHIBIT 44B
FILED UNDER SEAL

Hi --

As you likely know, the Department of Justice Antitrust Division ("DOJ"), and a coalition of state attorneys general have launched various investigations into potential anticompetitive conduct concerning Google's search and advertising products. In October, the DOJ and eleven state attorneys general filed a suit alleging that Google monopolizes certain search and search advertising markets, and in December, 38 state attorneys general filed a suit with similar allegations. Also in December, Texas and nine other state attorneys general filed suit alleging that Google monopolizes and engages in deceptive conduct with regard to display ad tech. The DOJ and state attorneys general continue to investigate the company for certain potential anticompetitive conduct.

You have been identified as someone who might have information that is relevant to this matter and you are being placed on "legal hold." This means you must keep (and not delete!) all relevant information as explained below.



[REDACTED] Please do not use the following tools or messaging apps to discuss any topics covered by this legal hold:

- any third party tools or messaging apps; or
- any Google messaging apps (such as Chat, Hangouts, Duo) or Dogfood apps. If you absolutely must do so, please make sure the settings preserve the messages, such as switching to "history on" for Chat or Hangouts.

SLIPSHEET

EXHIBIT 44C
FILED UNDER SEAL

[REDACTED]

We are reaching out to remind you that you are on one or more active legal holds. Please see below for a list of active matter names. [REDACTED]

[REDACTED] You previously received detailed instructions when you were placed on legal hold. You can find the original legal hold notice in your email by searching for "legal hold" and the matter name, [REDACTED]

[REDACTED]

[REDACTED]

EXHIBIT 44D
FILED UNDER SEAL

SLIPSHEET

[REDACTED]

As you know, you're on a legal hold for at least one antitrust matter to which Google is responding. [REDACTED]

[REDACTED]

So, we're writing to highlight three important points:

- **Google Chat.** It's ok to use Google Chat for purely non-substantive things (e.g., "can you hop on a Hangout real quick?" "remind me again when you're ooo?"). However, for discussion of any topic covered by the legal hold, it's best to avoid Chat. For these discussions, we recommend that you use email, and follow the usual rules of the road. **If you need to use Google Chat to talk about topics covered by the litigation hold, then you need to go on the record to make sure that your communications will be preserved.** This means actually switching your chat setting to "history on." We know that's not everyday normal life at Google, and it may feel strange, but given the legal hold in this matter, it's important that we do it. You should think of those chats the same way you think of email with regard to privilege — copy a lawyer, mark them as privileged, limit the distribution. If the person you're chatting with asks why you've turned on "on the record," you can tell them that you are on litigation hold.
- [REDACTED]

EXHIBIT 45



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Certifications / Cloud

How Much Data Is Stored in Google Cloud?

by [Jon Welling](#)

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Google Cloud? Will Google Cloud Storage ever fill up? Where does
data go?

These questions, you aren't alone. Storage can be a tricky topic
involving Google Cloud Storage and just how much data can be

Cloud Storage?

Cloud storage is a service that stores and allows you to access data on Google's
secure and secure storage for various types of data, including
documents and spreadsheets.

Google Cloud Storage.

Google Cloud storage is also a marketing term. For you IT folks out there, this is similar to how Live.com or Hotmail email services are nothing more than fancy Exchange servers.

Google Drive used to be the storage product for Google Cloud Storage. Though Drive still exists, the storage portion has become part of the Google One subscription. Google Drive is merely an app that acts as a file storage GUI.

Google Cloud Storage also powers [Google Cloud Platform \(GCP\)](#)—or should I say the other way around now? GCP powers Google Cloud Storage.



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The amount of data you can store in Google Cloud Storage depends on your subscription.

Pricing can get complicated because Google Cloud Storage has both consumer and business versions. Thankfully, Google has rolled the consumer services into a single plan. Google's previous subscription services were much more confusing.

For this part of the article, we will only refer to front-end storage solutions for Google Cloud Storage. We won't discuss [GCP storage options](#).

How Much Does Google One Cost?

Google Cloud Storage is now part of the [Google One subscription](#). Google One is a Google subscription service that rolls Google Photos, Google Docs, and other previous products into one subscription. The One service also includes mobile device storage and backup options.

Google One is offered in one of three subscription plans:

- Basic
- Standard
- Premium

The Basic subscription is \$1.99 a month or \$19.99 per year. The Standard plan is \$2.99 a month or \$29.99 per year. Finally, the Premium subscription is \$9.99 or \$99.99 per year. Each annual plan includes a discount.

The most significant difference between each subscription level is the amount of storage offered. The Basic subscription includes 100Gb of storage, the Standard includes 200Gb of storage, and the Premium plan includes 2Tb of storage. The Premium plan also includes [VPN services](#) for Android-powered devices.

Google Cloud Storage also includes a free tier that offers 15 GB of storage which is used for all

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Next, let's discuss the business version of Google Cloud Storage (GCS), which is included with Google Workspaces, which is Google's productivity product similar to Microsoft's Office 365.

Much like Google One, Google Workspaces comes in different tiers, including:

- Business Starter
- Business Standard
- Business Plus

The Starter tier is \$6 per user per month, the Standard tier is \$12 per user per month, and the Plus subscription is \$18 per month. Unfortunately, Google Workspace doesn't offer a discount for annual subscriptions. There is also an Enterprise level with custom pricing for more than 300 users.

Each subscription tier in Google Workspaces has various nuances. For instance, the Standard and Plus tier can hold virtual meetings with more participants. For this article, though, the Standard subscription includes 30 GB of data storage per user, while the Standard and Plus tiers have 2 TB and 5 TB of data storage, respectively.

Google Workspaces does not offer a free tier. However, it does provide a free trial.

How Much Data is Stored in Google Cloud?

So, how much data is stored in Google Cloud altogether? The answer: you'll never know. In all seriousness, Google doesn't release official numbers. However, we can make some pretty good assumptions.

In 2015, it was rumored that Google had multiple exabytes of data. Think about that scale. A typical home computer has a 1 TB hard drive. There are 1000 terabytes in one petabyte. An exabyte is 1000 petabytes. In other words, an exabyte is roughly one million home computers

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access to at least 15 GB of storage.

In 2020, it was reported that there were more than [1.8 billion active Gmail users](#). These are active users, not stale or abandoned accounts. They are both consumer and Google Workspace accounts, though.

So, at minimum, we can say that Google has to offer 15Gb of storage for each of those 1.8 billion accounts. That's 27 billion gigabytes or 27 petabytes of data storage.

That's not a complete picture, though. For example, many people subscribe to Google One or Google Workspaces. That means many people are likely using more than 15Gb of data in photos alone. In addition, since many small businesses use Google Workspaces as their sole productivity system, all of their business data is stored on Google Cloud Storage, too.

Those numbers don't include storage systems in Google Cloud Compute, either.

Now, let's say that 20% of those 1.8 billion active users subscribe to a Google Subscription and have access to a minimum of 100 GB of storage (instead of 15 GB). That means Google needs to include an extra 30.6 billion gigabytes or 30 petabytes, in that already high 27-petabyte number for a grand total of 57 petabytes.

Given that these numbers still do not account for subscriptions that include more storage or GCP customers, it would be easy to say that Google holds at least an exabyte of data.

It's also worth noting that Google hasn't given us updated numbers since 2020. So, these numbers may have increased—especially considering Google's overall market share.

Final Thoughts

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implementing Google Storage strategies.

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EXHIBIT 46

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

THE STATE OF TEXAS, ET AL,

CIVIL NO. 4:20-CV-957-SDJ

v.

GOOGLE LLC

Norton Rose Fulbright US LLP
1301 Avenue of the Americas
New York, New York 10019

March 11, 2024
2:04 p.m.

EXAMINATION BEFORE TRIAL of

[REDACTED], a 30(b)(6) Witness herein, taken
by the Plaintiff, pursuant to Article 31 of the
Civil Practice Law & Rules of Testimony, and Notice,
held at the above-mentioned time and place, before
JOANNA MARTINEZ a Notary Public of the State of
New York.

A P P E A R A N C E S :

NORTON ROSE FULBRIGHT US LLP

Attorney for Plaintiff

1045 W. Fulton Market, Suite 1200

Chicago, Illinois 60607

(312) 964-7800

EMAIL: john.mcbride@nortonfulbright.com

BY: JOHN MCBRIDE, ESQ.

FRESHFIELDS

Attorney for Defendant

601 Lexington Avenue, 31st Floor

New York, New York 10022

(212) 284-4910

EMAIL: rob.mccallum@freshfields.com

BY: ROB MCCALLUM, ESQ.

VERONICA M. BOSCO, ESQ.

ALSO PRESENT:

Jonathan Juarez,

videographer, Golkow

1 S T I P U L A T I O N S

2

3 IT IS HEREBY STIPULATED AND AGREED,
4 by and among counsel for the respective parties
5 hereto, that the filing, sealing and certification
6 of the within deposition shall be and the same are
7 hereby waived;

8 IT IS FURTHER STIPULATED AND AGREED
9 that all objections, except as to form of the
10 question, shall be reserved to the time of the
11 trial;

12 IT IS FURTHER STIPULATED AND AGREED
13 that the within deposition may be signed before any
14 Notary Public with the same force and effect as if
15 signed and sworn to before the Court.

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1 THE VIDEOGRAPHER: We are now on the
2 record. My name is Jonathan Juarez. I am the
3 legal videographer for Golkow Litigation
4 Services. Today's date is March 11, 2024, and
5 the time is 2:04 p.m.

6 This deposition is taking place at 1301
7 thy Avenue New York, New York in the matter of
8 the State of Texas et al. versus Google, LLC.
9 The deponent is [REDACTED].

10 Counsel please identify yourselves for the
11 record.

12 MR. MCBRIDE: On behalf of the plaintiff
13 States, John McBride of Norton Rose Fulbright
14 LLP.

15 MR. MCCALLUM: On behalf of the defendant,
16 Google, Robert McCallum of Freshfields with me
17 here today I have mu colleague also from
18 Freshfields, Veronica Bosco, and I anticipate
19 that my client, Mara Boundy, in-house counsel
20 for Google may join us at some point in the
21 near future.

22 MR. MCBRIDE: And I can't see the Zoom but
23 I believe that Trevor Young from the attorney
24 general's office of Texas is on as well as
25 Zeke DeRose and Melanie DeRose, from the Lanier

1 Law Firm also on behalf of Plaintiff States.

2 THE VIDEOGRAPHER: The court reporter
3 is --

4 MS. DEROSE: That's correct.

5 THE VIDEOGRAPHER: -- Joanna Martinez and
6 will now swear in the witness.

7 -- O --

8 [REDACTED], after having
9 first been duly sworn by a Notary Public of the
10 State of New York, was examined and testified as
11 follows:

12 BY THE STENOGRAPHER:

13 Q State your name for the record, please.

14 A [REDACTED]

15 Q State your address for the record, please.

16 A [REDACTED].

17 EXAMINATION

18 BY MR. MCBRIDE:

19 Q Good afternoon, [REDACTED].

20 A Good afternoon.

21 Q You are employed by Google?

22 A That is correct.

23 Q And do you work for Google in the City of
24 New York?

25 A I do, yes.

1 Q What's the location of Google's office in
2 New York where you live?

3 A In New York it's 111 8th Avenue.

4 Q Have you ever been deposed before?

5 A I have not, no.

6 Q Is there anything that you would prevent
7 you from testifying truthfully today? Medication?
8 Illness?

9 A No, there is not.

10 Q And do you understand that you're here to
11 testify regarding Google's dashboards for display
12 advertising?

13 A Yes.

14 Q And do you have personal knowledge of the
15 Google's dashboards that are used in the display
16 advertising business?

17 A I do.

18 Q And how did you come by that knowledge?

19 A As a software engineer at Google working
20 within display ads business, I have seen the some of
21 the dashboards that are used in this business.

22 Q Would you say that you are one of the most
23 knowledgeable people at Google regarding dashboards
24 for display advertising?

25 A I would is say I have a very good

1 datasets.

2 There are derived datasets that are,
3 you know, from that. It may be more specific; they
4 would be faster to query, and those could be much
5 smaller in scale. You know, maybe gigabytes. Maybe
6 even smaller. Megabytes and such.

7 MR. MCCALLUM: Can I just take a quick
8 break and see if there's anything else and then
9 probably we can wrap this up.

10 MR. MCBRIDE: All right.

11 THE VIDEOGRAPHER: The time is now is
12 4:32 p.m. and we are off the record.

13 (Whereupon, a short recess was taken.)

14 THE VIDEOGRAPHER: The time right now is
15 4:41 p.m. and we're back on the record.

16 Q [REDACTED], if someone had access to the
17 data -- raw data underlying the dashboard, would
18 that person be able to create their own dashboards
19 to interpret the data?

20 A Yeah, absolutely. The -- you know, any
21 commonly used infrastructure that's open source
22 should be able to -- or any tooling should be able
23 to take this data and manipulate it. You know, take
24 a subset of data that you're interested in and
25 display it in a dashboard.

1 MR. MCCALLUM: That's all for now.

2 MR. MCBRIDE: Just very, very brief
3 follow-up.

4 EXAMINATION

5 BY MR. MCBRIDE:

6 Q With regards to the accessibility of these
7 dashboards, if you had your laptop and you were
8 VPN'd -- in this room you were VPN'd into Google's
9 network, could you access them?

10 A If I had my lap- -- my corporate laptop
11 and I was VPN'd in this room with internet
12 connection, and assuming all that sort of stuff, and
13 I had permissions to view the dashboard, then yes, I
14 would be able to access them.

15 Q Does Google in your experience ever set up
16 clean rooms to allow customers to come and view
17 dashboards or query data sources?

18 A Customers, as in like customers of Google?

19 Q Correct.

20 A I have never once heard of any Google ever
21 letting a customer view internal data sources.

22 Q You said some of these data sources can be
23 exabytes and then you -- is that correct?

24 A Yeah. Some of our logs, you know, are --
25 are quite large.

1 Q How many -- how many hard drives, like
2 consumer hard drive would it take me to fill up an
3 exabyte of data?

4 A I believe Amazon AWS -- Amazon Web
5 Services offers petabyte storage, which is I think
6 for 100 petabytes will take up an entire shipping
7 container full of hard drives.

8 And they use this so that -- because
9 it's simply faster to bring hard drives to your
10 physical location, put the stuff on the hard -- and
11 then drive it to wherever you want take it,
12 rather -- so -- so you can imagine an exabyte would
13 be ten shipping containers at least full of hard
14 drives.

15 Q Got it. That's all I have.

16 MR. MCCALLUM: Just one quick follow-up.

17 EXAMINATION

18 BY MR. MCCALLUM:

19 Q You mentioned permission-ing of the
20 underlying data?

21 A Yup.

22 Q Do you have permission to access all of
23 the underlying data at Google?

24 A I don't, no. No one -- no one person will
25 have permissions on all data at Google.